THE MAGAZINE OF

Standards

. . . research, standards, and security — page 101

APRIL 1959

THE MAGAZINE OF

Standards

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

VOL. 30 APRIL, 1959 No. 4

Our Cover: Ten noncompeting companies are using the reactor housed in this "beehive" aluminum dome for basic research which they expect will result in radically new and improved products. The reactor was activated January 20, 1959. A facility of the Industrial Reactor Laboratories, Inc, this is the world's largest nuclear research reactor entirely owned and operated by private industry. For the significance of developments such as this, see Mr Townsend's article on research and standards, page 101.

ASA

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Opinions expressed by authors in THE MAGAZINE OF STANDARDS are not necessarily those of the American Standards Association.

FEATURES

NEWS

DEPARTMENTS

. . . . marginal notes

• THREE UNUSUAL STANDARDS are featured in this month's issue. These are the American Standards for statistical quality control.

The quality control standards had their beginning early in World War II, as explained by Mr Dodge in his article (page 110). As American War Standards, they exerted an important influence throughout the world. Many other countries used them as guides in setting up quality control programs of their own. In this country, the training of engineers to handle the control charts and to apply the statistical method of controlling quality in their companies led to an entirely new engineering profession. After the war, the rapid growth of that profession resulted in organization of its professional society, the American Society for Quality Control (page 106).

• STANDARDS put a floor under performance. They do not hamper progress. These statements must be made over and over again but still skeptics continue to appear and the education must be started over again. Now, the gas industry has come up with an example that proves the point. For many years, gas-burning appliances have carried a blue seal, certifying that they meet American Standard approval requirements. (See *The Magazine of Standards*, March, 1959, page 78, for a discussion of the most recent standards in this series.) This year, the gas industry is emphasizing gas-burning appliances that not only meet American Standard performance requirements but that boast many additional quality features. These are being advertised as "Gold Star" appliances. The Gold Star, standing firmly on basic American Standard performance requirements but with added quality features, is being promoted in national advertising on TV, radio, newspapers, trade journals, and in leading magazines.

• THE BACK COVER AD this month features Section 8 of the important Code for Pressure Piping.

Reports show that eight states and all the Provinces of Canada have adopted Section 8.

This is the first of the Code sections to be revised. All will eventually be brought up to date and published in separate volumes.

This Month's Standards Personality

J. H. FOOTE, registered professional engineer in eight states, is an executive who has long been active in standardization. Mr Foote is now chief engineer of Commonwealth Associates, Inc, Jackson, Michigan, and a vice-president, director, and director of engineering of its affiliated company, Commonwealth Services, Inc, New York. He has the unusual distinction of having withdrawn from the presidency of his company, to continue as its chief engineer while undertaking greater responsibilities of national and international scope. He is president of Commonwealth Buildings, Inc, another affiliate, and is a director of Atomic Power Development Associates, Inc, as well as of the Jackson Area Industrial Development Corporation.

Mr Foote's interest in standardization started in 1922 when he became chairman of the Electrical Apparatus Committee of the National Electric Light Association (NELA) Great Lakes Division. Since then he has held the chairmanship of important committees of many organizations. He knows the American Standards Association well as a member of ASA's Board of Directors, and former member of the Standards Council and Committee on Procedure. He is now vice-chairman of the Materials and Testing Standards Board, and a member of the Electrical Standards Board. As a member of the U. S. National Committee, he takes an active interest in the International Electrotechnical Commission, and has served as a delegate to its meetings in Europe. He is also a member of the Conference Internationale des Grands Reseaux Electriques (CIGRE).

A Fellow and life member of the American Institute of Electrical Engineers, Mr Foote was recently nominated for the AIEE presidency for the 1959-1960 term. At present he is chairman of the Administration Department. He is currently chairman of the Administrative Committee on Standards of the American Society for Testing Materials, and is a past director of ASTM. He is also a member of the American Society of Mechanical Engineers, a Fellow of the Michigan Society of Professional Engineers, and past president of the Michigan Engineering Society.

In his busy life, Mr Foote has found time to serve the cause of education, as a member of the Boards of Trustees of Olivet College and of Adrian College, and currently as a member of the American Society for Engineering Education and its Committee on Ethics. He also is a member of the Committee on Training of the Engineers' Council for Professional Development.

In recognition of his accomplishments, Wayne State University in 1958 awarded him an Honorary Degree of Doctor of Science in Engineering.

Mr Foote was graduated in 1914 from Michigan State University as a Bachelor of Science in Civil Engineering and soon after married Marie D. Dinius, a high school classmate. They have a son, James Harold Foote, Jr, also an engineer, and a daughter, Mrs Elmer Rourke, San Diego, California.

As time and assignments permit, Mr and Mrs Foote spend their weekends at their northern Michigan retreat. Both love the beauty of its wilderness and spend many hours hiking and exploring and recording their experiences on film and color slides.

RESEARCH

RESEARCH TO MEET THE NEEDS of world-wide competition lead U. S. industry into many unusual activities. To find means of producing wide thin-gauge stainless and alloy steel sheets for aircraft and missiles was the purpose of the experiment shown here. Workmen are lowering a carbon steel cover plate on an experimental "sandwich" filled with stainless steel plates. When hot rolled the sandwich will be reduced to about 10 percent of its original thickness. The sandwich-rolling technique has experimentally produced sheets 90 inches wide and 230 inches long—about twice as wide as sheets produced by conventional methods, U. S. Steel reports.

STANDARDS AND SECURITY

by JOHN R. TOWNSEND

OUR NATION HAS ASSUMED LEADERSHIP of the free world and strives today to achieve world acceptance of the policies and principles to which we in the free world subscribe. We do not seek to dominate the world. We would be content to see all the world administered by its various peoples following principles of their own free choice. But while we cherish our view of political freedom, the communist world supports the police state, and reconciliation of these two positions is difficult.

Ours is a competition in which are combined principles, policies, tests of strength in small actions, and national survival. Because we as a nation prize both principles and survival, we generate great energy in their defense. A vast amount of government financing is directed to this purpose. We all support government programs in this competition. But we should be going faster —in terms of results. We should be getting more for our money. The fault lies not with the amount we are spending, nor with the level of effort. The purpose of this paper is to analyze the situation and to propose a systematic improvement of our efforts.

First, a status report:

Industry — private industry — seeks operations that will yield as high a dollar return as possible consistent with the general situation. The key word is *profit*. The modern industrialist seeks the creation and vigorous exploitation of a rapidly growing domestic and world market. He must follow the mandates of local and national government policy, taxes, trade regulations, tariffs, anti-trust laws, and labor statutes.

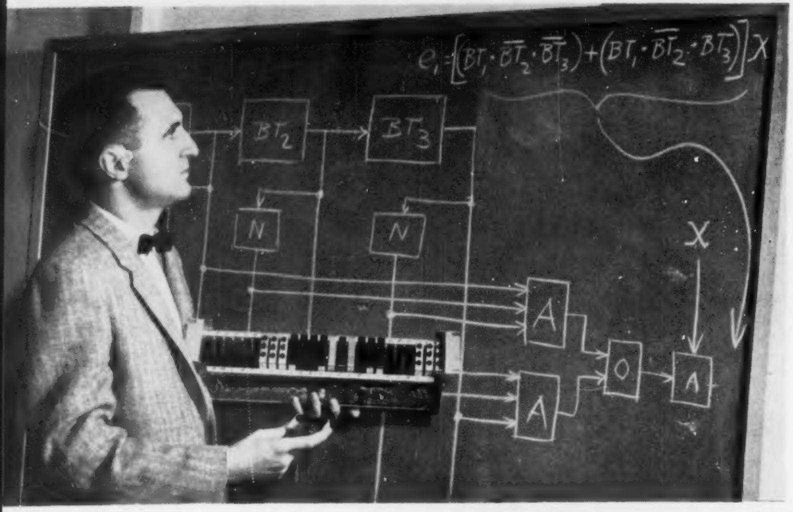
In order to carry on trade, one must have fundamental standards of length, mass, and time. All other standards can be referred to them or expressed in these basic terms of measurement. With the advent of modern world travel, communications, and commerce, there is ever more emphasis on the need for international standards in the terms of these basic units. Much progress has been made in recent years and now we have an inch-millimeter conversion and a basic standard of length.

There are two definitions given for a standard. The first concerns that which is set up and established by authority as a rule for the measure of quantity, weight, extent, value, or quality. A second definition relates to that which is established by authority, custom, or general consent, or as a model or example of the way in which a thing should be done; a criterion; or a test.

The meter was defined as one ten-millionth of the quadrant of the earth's surface at the longitude of Paris. Errors were found in the production of the physical embodiment of this basic standard, and the international prototype meter, which was actually in error, became the physical standard by actuality. At a recent meeting of the International Committee on Weights and Measures in October 1958, it was agreed that the meter was equivalent to 1650763.73 wavelength in vacuo of the transition between 2P10 and 5D5 of krypton 86 atom. The ratio between the meter and the yard, as recently agreed upon, is: one inch is equivalent to 25.4 millimeters.

The unit of volume is the liter and this is defined as the capacity of one decimeter of pure water having the

MR TOWNSEND is special assistant to the director of research and engineering, Department of Defense, and is president of the American Standards Association.



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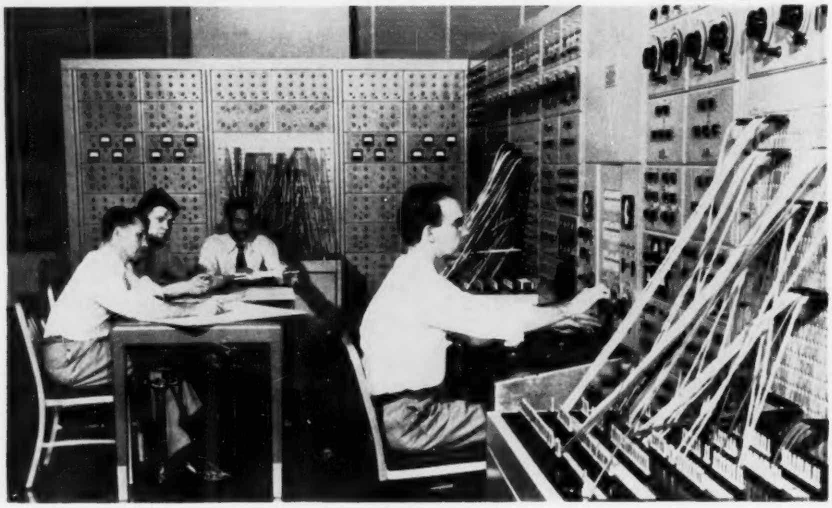


CALCULATING MACHINES—one comparatively recent development from science laboratories—being applied in ever broadening fields by both industry and government. ABOVE—Transistorized blocks enable electronics engineer to move directly from Boolian algebra or symbolic logic to final circuit design without intermediate development steps. Tiny electronic elements plugged into test rack complete a hypothetical computer circuit design illustrated by equation on blackboard. RIGHT—Calculating machine reproduces in miniature hundreds of miles of transmission lines in vast power networks. With this "a-c network analyzer" it is possible to determine what would happen in any part of a network if a line were broken, a generator failed, or new lines were added.

mass of one kilogram. The volume of a liter is nearly equal to 1000 cubic centimeters—actually 1000.028 cubic centimeters.

The standard for mass of the United States is the U.S. prototype kilogram 20 which is made of platinum 90 percent, iridium 10 percent, and is kept at the National Bureau of Standards. The avoirdupois pound 20 with relation to the United States kilogram 20 is: one pound equals 0.4535924277 kilograms or one kilogram equals 2.20462234 avoirdupois pounds.

The successful in business are those who can ably and continuously work their way around the traps of this course of industrial, financial, and legalistic bumble-puppy. For many years, we in the United States have led the world in the technology of manufacturing. But today, domestic and world markets bristle with competitors. Russia and her satellites are determined to outstrip us in world markets and to test our ability to supply even our own domestic needs. The technologically primitive, less industrialized nations of the earth are learning to process their own materials for their own use. Colonial-

ism is fading away. You have no choice. The profit motive compels you to participate in this world technological competition.

How well you do is a matter of deep concern to the Department of Defense. Military science to produce weapons of the future, like military strength in today's weapons, depends on industrial know-how and industrial preparedness not less than on its own technological resources. Our survival as a nation, depending as it does on military strength, rests ultimately on our national skill in science and technology. Industry's success in world markets, similarly, depends ultimately on the same national skill.

Thus we have, here, two inter-related economies, one industrial and the other strategic. Programs in each impact on the other. We would be wise to take account of this verity in our planning for both industry and defense. We must learn to exploit each for the other.

These two economies have the same basis. All material progress is based upon knowledge and understanding of the physical world around us. This is often called basic or fundamental knowledge. The attempt to penetrate the wall that surrounds known areas is called basic or fundamental research. This is a search after knowledge that can be fitted into a scientific picture or discipline that is broadly or universally applicable. New knowledge sharpens the focus, or extends the horizon, of our picture of the physical world. The application of the knowledge to the design of useful items—military or civilian—is called exploratory development; thus we use new information to ready a new item for manufacture, production, and use.

There is a wide difference between commercial or civilian use, and strategic or military use. We have no real civilian need to project devastating explosives for thousands of miles at supersonic speeds. But we are faced with an urgent military necessity to be able to do this. The military necessity of World War II advanced by years—perhaps even decades—our ability to make synthetic rubber. Military necessity requires us to develop substitutes for strategic materials, and to employ old and new materials in environments much more severe than those encountered in our civilian economy.

We developed processing methods for titanium and reached a productive capacity of 22,000 tons per year to be ready with a material as strong as steel, a third lighter, and resistant to corrosion and heat. There was no such material available from our industrial efforts at the time the strategic need was identified. It had to be supported by public funds. Now it is available for all of us and a new industry has been born and nurtured ahead of its normal development because of modern military and national security.

Titanium and synthetic rubber exemplify the way in which the scientific efforts of our strategic economy have helped commercial or civilian enterprise. There are many more examples of this. And there are many examples of ways in which commercial scientists afford tangible aid to our strategic programs. In my own experience as chairman of the Materials Advisory Board of the National Academy of Sciences, we have requested more than a thousand industrialists and senior industrial technicians to serve on advisory committees of various kinds and there has never been a single refusal to serve. I consider this a remarkable example of patriotism. And this is only one of countless instances of direct or indirect support given by industry to our military program.

So much for status. Now: What do we do to improve the situation?

In the first place, we must have full and free communication of scientific facts so that our scientific world will grow in detail of resolution and in scope. The methods of communication open to us are many—papers, conferences, abstracts, information centers, seminars, study groups, briefings, symposiums. Communication within each industrial concern must be free, up and down the organization and laterally. Moreover, technical communication between government research groups and industry must be equally free. This is not theoretical, but practical business sense: the best customer is the one who knows what he wants, and the best seller is one who anticipates and rushes to supply the customer's needs. There are many channels available between the Department of Defense and industry. We hope to develop more.

Secondly, both government and industry are guilty of one mistake, a mistake that is grossly wasteful of time, materials, facilities, and dollars. Much time is wasted in manufacturing ineffective weapons, or rushing prematurely into the production of inadequately engineered and untested equipment. In the breadboard stage of research, we can have plenty of ideas and try them all out. Competition among scientists is effective in this early period. It costs comparatively little, at this early stage, to try out new and competing ideas. Scientific duplication is not an evil at this stage; it may stimulate refinements and new directions in engineering. But in any new development, as we move from the breadboard stage to the prototype production item, we must employ trained technical circumspection. We must avoid duplication and premature designs; we must have a good knowledge of standards, which means essentially a good knowledge of previous engineering experience and current art. Only in this way can we achieve giant steps in technical progress, plus reliability of product, plus efficiency in our use of scientific manpower.

Rapid and efficient technical progress, remember, is the key to success in our contest with Russia. We must apply science fully and speedily; we must keep up-to-date on all current art. Stagnation cannot be tolerated at any time because the cost of stagnation is cumulative —it increases with current, mounting economic and political problems. If we only make piddling improvements to old art, we will find ourselves running up a descending escalator.

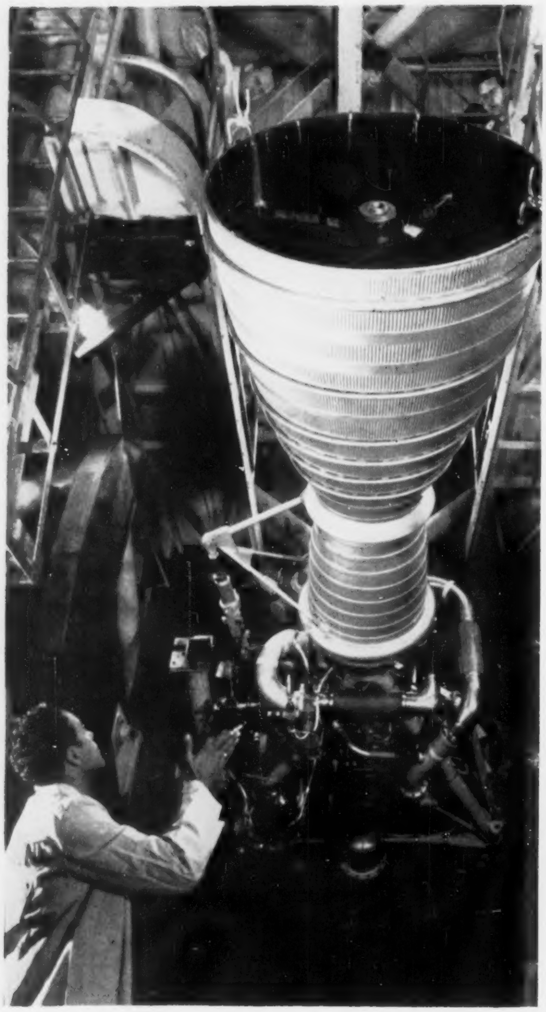
Our mistake, then, is in expecting results too quickly. Neither rushing into new developments prematurely,

nor trouble-shooting past mistakes, should occupy the attention of our scientific talents. The scope of change and improvement is limited if one demands results too quickly. We should take as broad a look at basic research as we can afford. We should devote less time to fringe development and more to basic science.

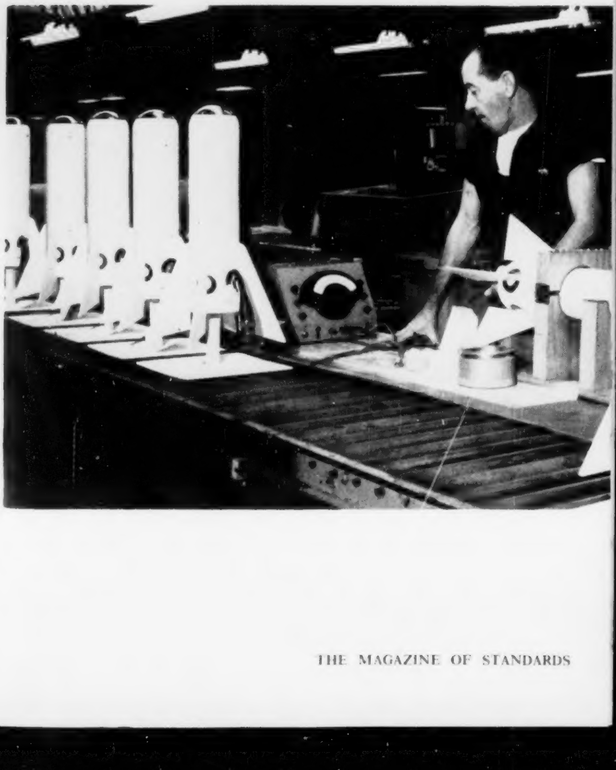
Another proposition is that the technical man must be brought out from the back room. How in the name of heaven can we make progress when those best equipped to judge the potentialities of a new piece of basic scientific knowledge, a new concept of applied or engineering science, remain out of touch with those in places of decision? Progressive firms now have scientists on their boards of directors and as members of their executive committees. Management of research and engineering is no less difficult and complex than the technical work of research itself. Decision-making in the scientific field is becoming more difficult. It is necessary that we act in recognition of this obvious principle: integrate decision-making in the scientific field with decision-making in management generally. The scientist must be present in the top policy councils to interpret the consequences of his decisions to those whose future course may be decisively affected by them. He must be present in these councils, because in his own right he belongs there.

I have already mentioned the need to establish standards. If we are to evaluate an improvement, it must first be measured. Authoritative quantitative tests of all sorts must be in use at every stage, otherwise we cannot determine if an improvement has been made. Furthermore, such quantitative tests and standards are our only means for assessing the reliability—the all-important reliability—of our product. Only in this way can we be up to date in the application of the engineering art.

Now a standard means either of two things. One is:



Allegheny Ludlum Steel Corp.



Philco Corp.

an authoritative rule for a measure of quantity, weight, extent, value or quality. The other is: an authoritative or accepted model, example, criterion or test.

We see on all sides evidence that living with other people imposes the need of mutual understandings of how, how much, where, and when. Time of year was necessary to know when to plant so as to take advantage of the seasonal sun needed for growth in an organic society. The early astronomers of Egypt and the Mayan and Toltec civilizations of the Americas, in view of its importance, made this knowledge the exclusive property of the priests. Early Greek and Roman civilizations exhibit the sun dial as a common object of time-keeping, to be followed by the clepsydra or water clock and the hour glass. The development of the mechanical clock in the Twelfth Century led to the clock tower and furnished another reason for the clustering of homes where, within sight and hearing of the temporal regulator, men could carry on their mutual, time-dependent activities. The pocket watch followed, and since that invention, time has had to be measured with increasing precision to serve the further technical advance of civilization.

But the basic concept of time in terms of a trip around the sun once a year, and the daily rotation of earth from dawn to dawn, still holds as the basis of the divisions of a day in hours, minutes, and seconds. Ballistics has given us the millisecond (0.001 seconds), electronics the micro-second (0.000001 seconds), and modern nuclear science the "shake" (0.00000001 seconds). These latter units are not normally used in our daily life, but their use is now an everyday event.

Domestic and world trade, the measurement indispensable to science and industry, the exchange of quantitative information about the world we live in, are all based on standards of the first definition. Establishment of these standards is the principal assignment by statute

SCIENCE for military defense. FAR LEFT—Massive ducts with flex joints are used on the engines of the Atlas, Thor, Jupiter, and Redstone missiles. The metal, A-286, used in this duct work is a special high-temperature alloy used for a low-temperature application. These special ducts carry liquid oxygen from the pump to the thrust chamber. Temperature changes encountered are from minus 297 F to plus several hundred F. LEFT—Guidance and control units of the Sidewinder heat-seeking air-to-air missile getting a final check before being shipped to the U. S. Armed Forces.

of the great national laboratories—our own National Bureau of Standards, the British National Physical Laboratory, and the Bureau of Weights and Measures in France.

For the meaning of the second definition we must look further and over a broader area of the landscape. This is the pause to regroup before extending toward further progress. It is the standard that describes the consensus of best current practice, in a dynamic and advancing technological community. This is the area in which mainly the American Standards Association needs to exercise its collective talents in support of our national and world program of peaceful advance. It is the mission of ASA to orchestrate the numberless detailed programs throughout industry, commerce, and technical art; to crystallize and codify best practice, always preserving the best but always ready to advance to newly won positions.

Military strength provides the security necessary for industrial growth. Industrial and economic strength provide the basis for military security. And the technological growth and its consolidation in acceptable modern standards provide the basis for both military and industrial progress.

A formula thus emerges. We must have the best possible research directors, government or private, supported with good equipment and manpower, and with the best possible channels of communication. The views of scientists and qualified technical people must be accessible to management at the top, and must be accorded the weight and authority they justly deserve. Budgets for research should be formulated in recognition that we stand or perish with the success of our national level of scientific accomplishment. The laboratory must be free to take up a study, and it must be free to drop a study. The products of the laboratory must be ruthlessly appraised to yield ideas for development. As developments move along the trail toward acceptance, there must be a rolling barrage of standards, always alert to identify the best practice.

And what will all these ingredients yield us?

First, history shows that military necessity has led to advances in preservation of food, control of disease, development of means of transportation, improved clothing, advances of metallurgy and chemistry, that in the aggregate have transformed our world.

Second, military strength stems today from advances in technology; never was our need greater to command the utmost in military potency.

Third, the successful management of our national technological effort will itself demonstrate to the world that our free enterprise system surpasses anything that communism can produce.

Thus, out of our achievement of teamwork and coordinated action in the scientific world, and in our standardization of the best products of science and technology, can come the leadership of the world necessary for the evolution of our principles, our freedom, our survival.

The AMERICAN SOCIETY FOR QUALITY CONTROL

by George R. Foster
Managing Editor, *Industrial Quality Control*

In the Beginning

ANY DISCUSSION about the field of scientific quality control or the American Society for Quality Control must of necessity begin with Walter A. Shewhart, the recognized "father" of the quality control movement in American industry and the man for whom the Society's highest honor, the Shewhart Medal, is named.

It was Walter Shewhart who, in 1924, first conceived the control chart.[1] This single idea is recognized as the first and most important of a long series of steps that were subsequently spearheaded by Walter Shewhart and the Bell Telephone Laboratories to translate the principles of mathematical statistics into simple, easy-to-use techniques for economically controlling product quality in the everyday operations of industry.

Although this marked the real beginning, many people believed that quality control, like operations research, was of World War II origin. This belief got its start principally because it was during this period that quality control was put to a severe test — and came through with flying colors. Concurrently with this expanded interest in quality control in industrial circles, there were also the beginnings of organized co-operation by people who had become active in quality control.

Organization of ASQC

Wartime ESMWT (Engineering, Science, and Management War Training) short courses in quality control throughout the country turned out a steadily growing body of people concerned with quality control. These people, returning to their own communities, became the nucleus of numerous local quality control societies, which in turn began to band together on a national scale.

Finally, on February 16, 1946, representatives of the then 13 local societies, some of which had already been confederated into two national organizations, met in New York City at the Edison Electric Institute to dissolve the two current societies and ratify the constitution for the American Society for Quality Control. Thus was the Society born.

The 13 original "colonies" have since grown to 110 sections, of which 6 are in Canada, one each in Mexico City and in Japan. One is a chapter made up of approximately 150 people scattered throughout the world. The combined membership of the original 13 sections was 1186. In 13 short years the Society has seen a phenomenal growth to over 11,000 members with every prospect of topping 12,000 this year.

[1] In 1941, Shewhart's control chart method was adapted for industrial use by a group of individuals chosen for their contributions in the field and working as a committee under the War Emergency Procedure of the American Standards Association. The result of the committee's work was published as American War Standards Z1.1-1941, Guide for Quality Control; Z1.2-1941, Control Chart Method of Analyzing Data; and Z1.3-1942, Control Chart Method of Controlling Quality During Production. These standards were used by the War Production Board for control of quality for military use and were adopted widely by other countries. The first two had been out of print for some time. Now, all three have been revised to bring them up to date and published copies are again available (see article by Harold F. Dodge, page 110).

Beginning of Industrial Quality Control

Just prior to the efforts at organization, the Buffalo and Rochester, New York, societies began publication of *Industrial Quality Control,* a journal devoted to quality control. Although this began modestly as a 20-page offset bi-monthly in July 1944, subscriptions began to roll in from quality control people all around the country. In a relatively short time the magazine had achieved national scope and recognition; consequently, when the Society was formed, it was natural that *Industrial Quality Control* should become its official journal. Under the guidance of the Society's Editorial Board, the journal has flourished to its present status as a 40-page monthly publication.

Purposes of ASQC

One of the chief aims of ASQC has been the dissemination of knowledge and the education of its members in the science of quality control. In the early days, this program was pursued through monthly meetings of the local sections, through the journal, and through annual quality control conferences at a regional level, such as the Midwest, New England, Middle Atlantic, and others.

As the needs of its members grew, it was shortly apparent that nationally sponsored conferences were becoming a necessity. Accordingly, the Society's first nationally sponsored annual convention was held in 1951 in Cleveland, Ohio. Conventions have been held annually in May since then, the next one, coincidentally, being in Cleveland again in May 25-27, 1959.

SQC as a Methodology

Without a doubt, the most interesting facet of the Society's development over the years has been that of scope and purpose, particularly as regards the science of quality control itself. To tell this story, even briefly, requires describing three related paths along which quality control has expanded.

The first of these paths is methodology or technique. Basically, the quality control movement got its start from Walter Shewhart's control chart as a practical application of statistics to industrial quality problems. Principles of data analysis, long known to mathematicians, were converted into practical, everyday shop techniques. Accordingly, in the early days, the budding quality control field was known as statistical quality control, or SQC. This designation was used by many as a means of identifying the fact that this new science had statistics as its fundamental core — that is, mathematical statistics as distinguished from so-called business statistics. Also, the term SQC was used because many companies would ask: "What's different about your quality control and the quality control we've been using in our operations for years?" SQC was an attempt to explain the difference.

Even so, although statistics formed the hard core of the SQC technique, it was rapidly apparent that many other techniques, basically nonstatistical, were required of the quality control engineer to control product quality. Terms like "Modern Quality Control" or "Total Quality Control" were proposed to replace "SQC." Another SQC, "Scientific Quality Control," which connotes the broad range of methodology required over and beyond statistical techniques, might be more appropriate.

SQC as a Service to Industry

A second path along which quality control has developed has been in the area of type of industry served. Originally, quality control was developed by Bell Telephone Laboratories and by Western Electric Company, the Bell System's manufacturing branch. A common plaint in the World War II days, heard over and over again, was, and indeed too frequently still is: "So it works in the mass production telephone industry; it won't work for us."

Although this attitude was quite understandable, quality control people knew this was not true; they needed only an opportunity to prove otherwise. It is little wonder then that many became almost evangelistic in their promotion of the SQC technique in other industries. Success stories began to roll in as new companies tried this new technique; unfortunately, failures were also common. These were generally brought about by inexperienced quality control people trying to sell SQC as a panacea for all ills. Fortunately, in many of these instances, the fault was not in the method but in its administration, and it was possible to turn failure into success.

As quality control spread to different industries, it again became apparent that although basic principles were the same, variations in application were needed. Recognizing this need, the Society in 1952 began to establish divisions, the functions of which were to solve the problems common to a particular industry. Thus the Society's present divisions are Automotive, Aircraft and Missile, Administrative Applications, Electronics, Chemical, and Textile. Today, quality control principles are being successfully applied, not only in many manufacturing and processing industries, but also in such service industries as mail order houses, insurance companies, retail stores, and airlines operations.

SQC as a Departmental Function

To see fully how this industrial diversity has come about, we must back track to a third path of quality control development: industrial functions or departments served by quality control.

Many companies in the early days labored under the mistaken impression that quality control was synonymous with inspection. While there was good reason for this confusion, the fact is that SQC is a very powerful means to an end — not the end itself. Early educational programs were devoted to showing how control charts and sampling plans would simplify the

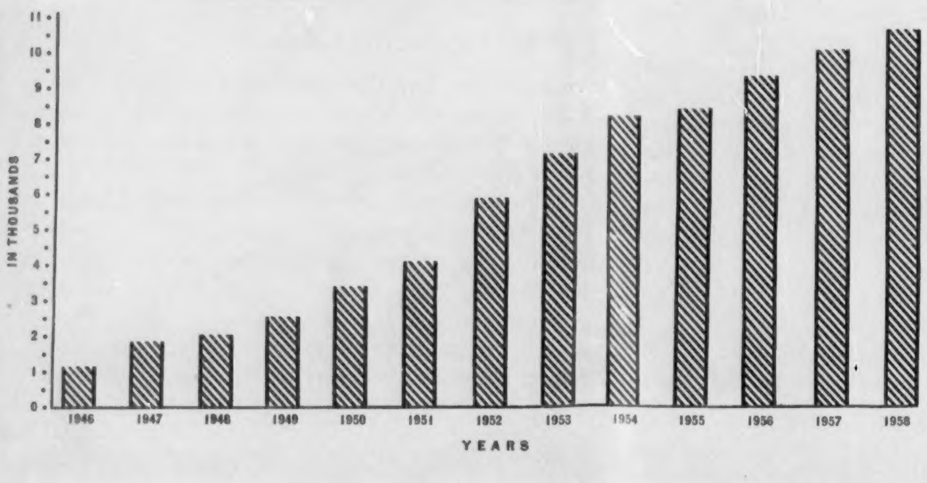
inspector's job of *sorting* product for poor quality, and of examining incoming material and supplies for non-conformance. While these courses were often attended largely by inspection department personnel, lending further credence to this impression, even then the QC man's hue and cry that "quality can't be inspected into a product; it must be built into it" was beginning to take form. As a matter of fact, Walter Shewhart's original concept envisaged that the quality control chart would be a manufacturing department tool to be used by production operators on the line. That it became so firmly entrenched in the inspection departments is partly a tribute to these departments, which foresaw the enormous possibilities in SQC. Partly, it was the result of "practical" industrial thinking at the time that quality could best be controlled by sorting out the bad product from the good. This, of course, was and is a very costly view because there's no way of recovering the cost of scrap once it is produced.

Thus, the branching out of quality control from inspection departments into service departments in their own right began almost at its inception. Today, quality control stands ready to serve virtually all departments in a company. In addition to the inspection and production departments, it can also serve design, engineering, research and development, plant maintenance, assembly, etc. Early in the game it was found that many quality problems were unwittingly generated by the decisions of these departments. The quality engineer was therefore forced into finding suitable solutions. Two examples will serve to demonstrate this point.

Design engineers have often been guilty of specifying blueprint tolerances that were difficult or impossible for production personnel to meet. Defense of this practice rested on the grounds that production departments probably would not meet specifications, anyhow, so if tolerances were made tight enough, perhaps the end result would be only twice the specified variation and this would meet ultimate design objectives. The quality engineer's solution, of course, was first to establish a meeting of the minds. Secondly, he had to show how machine capability analysis would select the proper machine to maintain the tolerances the design engineer really had to have. Thirdly, he had to convince the design engineer to specify only this tolerance and show both him and the production operator how the control chart could be used to maintain satisfactory performance relative to these specifications.

The second example concerns the area of engineering experimentation. Experimental results have long been used in specifying materials and other factors having an effect on the product. Quality problems kept cropping up because these experimental results were not reliable. Briefly, the classic engineering approach to an experiment was to hold all factors constant except the one whose effect it was desired to study. Results were then interpreted on the basis of the variable factor. If knowledge of the effects of other factors was desired, then a separate series of experiments was needed for each such factor.

The statistical viewpoint on experimentation showed that there were several fallacies in the classic approach: (1) in any experiment it was virtually impossible to forecast all the factors affecting the results; (2) even if this were possible, the belief in holding all but one factor constant is a dangerous myth leading to faulty data and hence erroneous conclusions; and (3) most importantly, even attempting to hold all but one factor constant is not a good procedure because it misses the interaction effect, i.e., a major effect on the results, when two or more of the factors are changed simultaneously, that is much larger in magnitude than would occur if the same factors were changed independently. Quality engineers were able to show that if the original experimental program were statistically designed according to a "Latin Square" or "Factorial" design, whereby all known factors are intentionally varied in a random pattern, subsequent statistical analyses of the results, such as analysis of variance (ANOVA), would eliminate these difficulties with the classical approach. In addition, the ANOVA approach often suggests otherwise unknown factors, quantifies experimental and instrument errors, shows which factors have negligible effect, and particularly does all this with much fewer experiments. In a word, the statistical technique in R & D



American Society For Quality Control Membership

MEMBERS of the Society's Executive Board—First row (l to r): Allan M. Hull, Treasurer; Leon Bass, Junior Past President; C. E. Fisher, President. Second row: Rocco L. Fiaschetti; Leslie S. Eichelberger, Executive Secretary; Clarence R. Burdick; August B. Mundel; Ellis R. Ott. Third row: A. V. Feigenbaum; J. Y. McClure; Gerald J. Lieberman. Messrs Burdick, Ott, Feigenbaum, and McClure are vice-presidents. Messrs Fiaschetti, Mundel, and Lieberman are executive directors. Executive Directors Warren R. Purcell and David G. Browne are not in the picture.

(Research and Development) yields more useful information for a given amount of experimentation than is otherwise possible—a cost saving in any industrial experimentation program which becomes even more important later on in destructive life tests or other testing of expensive units of product.

These two examples merely hint at the quality engineer's potential services to these and other departments; they simply indicate why quality control is not exclusively either an inspection or manufacturing function.

SQC as a Management Aid

The broad scope of the quality control department's services has come about largely on the interpretation that product quality is affected by virtually all departments of a company. Since surveillance of product quality is the responsibility of the QC department, it behooves the department to develop whatever statistical or other techniques it can to help each department resolve its share of the problems that affect product quality. With this viewpoint, Quality Control assists Purchasing, for instance, in the selection of vendors to assure that satisfactory raw materials and purchased components are received in the plant—things that can have an adverse effect on the company's own product.

Modern quality control science does not stop, however, with the control of product quality and all the factors discussed so far that affect product quality. Most responsible quality engineers and managers regard quality control as an even broader function. Specifically, they consider quality control as the "control of quality of decisions." By this viewpoint, quality control is in reality an industrial management tool. As such, it not only includes the foregoing product quality functions, since in each case the problems involve decisions, but a good many other areas besides. In fact, the Society's Administrative Applications Division devotes itself exclusively to developing quality control techniques for use in the several administrative and management areas of a company.

SQC as a Profession

From the foregoing description of the different paths along which SQC has developed and is still developing, it should be apparent that there is no single, compatible definition of a "quality control man." This problem has been recognized by the Society from its beginning, when industry confused quality control with inspection, to the present time. With so many different types of industries represented, selecting a single title consistent with all is virtually impossible. The Society feels this problem is important. Two years ago a study of it was assigned to a Professional Development Study Committee directly under one of the Society vice-presidents as its chairman. Studying qualifications and titles was only one of several related tasks undertaken, and the work of this committee continues now under a General Professional Council which the committee recommended be set up in the Society's organization.

For lack of a broader title, the present trend in most industries is to "Quality Control Engineer" or simply "Quality Engineer." Although this title is satisfactory for QC people in the manufacturing industries, people in service industries and even those in the administrative departments hesitate to call their work quality engineering, though in a broad sense this is what it is, even in these areas.

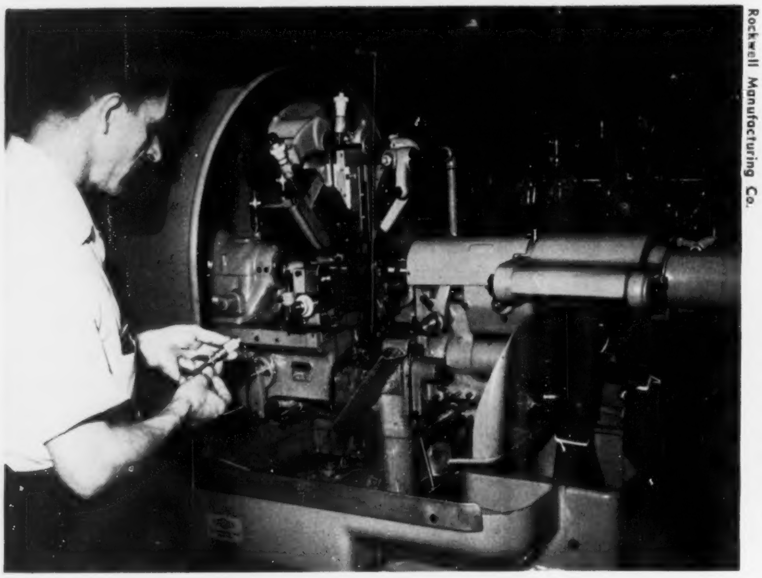
In the End

There is, of course, no foreseeable end to quality engineering. The potential service to American industry is sometimes a little overwhelming to contemplate, but nevertheless is a very real service that the Society supports to the fullest. As the professional technical organization in the field of quality control, ASQC offers programs designed to assist its members in becoming more and more useful to the industrial community of which they are a part.

STANDARDS FOR

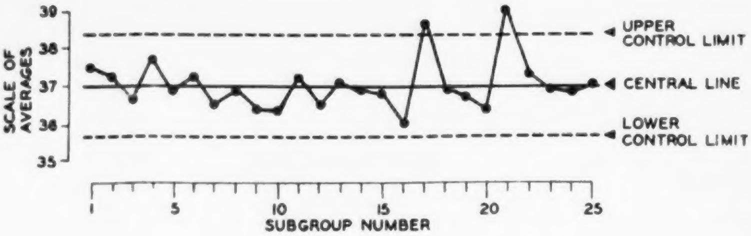
Statistical Quality Control

by H. F. DODGE



CONTROL OF THE QUALITY of a product during production is one of the principal purposes of the statistical method of quality control. Use of the control chart for analyzing the data obtained from sampling and testing the product shows when trouble occurs and makes it possible to correct the cause of the variation immediately without running off too large a number of products that will be rejected. Here, a foreman checks dimensions of a chart drive pinion.

Sample of control chart (American Standard Z1.1-1958). There is no need to question the points falling inside the upper and lower control limits. Points that fall outside the control limits indicate lack of control. The chart shows just when the trouble occurred.



THE THREE AMERICAN WAR STANDARDS on statistical quality control have been brought up to date and approved as American Standard. They are:

Guide for Quality Control, Z1.1-1958

Control Chart Method of Analyzing Data, Z1.2-1958, and

Control Chart Method of Controlling Quality During Production, Z1.3-1958

These three Z1 standards collectively outline the basic concepts and philosophy of the Shewhart control chart (Z1.1) and provide methods for using the control chart in the analysis of data (Z1.2), and in the active control of quality during production (Z1.3). Step-by-step procedures are given along with examples of application. Also provided is a definite criterion with respect to the character and quantity of information needed in order to justify the conclusion that a process is "in a state of statistical control." With such control, the quality of the resulting product will have minimum variability and "may be predicted with the highest degree of assurance" [Z1.1, par. 7 (4)].

The American War Standards which the new American Standards supersede were prepared and published in 1941 and early 1942 as a result of a request sent to the American Standards Association by the War Department. This action was taken with a view to making generally available certain proven but not too well-known procedures for controlling the quality of materials and manufactured products. Because of the indicated urgent need at that time, these standards were prepared in accordance with the ASA defense and war emergency procedures by a specially appointed Emergency Technical Committee (later called a War Committee). The committee had the following membership: A. G. Ashcroft, Alexander Smith and Sons Carpet Co; W. Edwards Deming, Bureau of the Census; Leslie E. Simon, Ordnance Department, U. S. Army; R. E. Wareham, General Electric Co; H. F. Dodge, Bell Telephone Laboratories, Inc, chairman; and John Gaillard, American Standards Association, secretary.

In the 1958 edition of these three basic quality control standards, new reference material and new appendixes are included to bring the presentation up to date, and consideration is given to one or two alternate statistical measures. The technical content of the new American Standards differs in only minor degree from that of the American War Standards. This is due to the fact that the control chart techniques and methods included in the earlier work continue today as standard methods in the quality control field and are quite generally recommended as standard in recognized texts and training manuals.

The American War Standards were used during World War II as basic texts in quality control training courses (by Professor Holbrook Working; Professor Edwin G. Olds, and others). These courses were sponsored by the War Production Board and the United States Office of Education under the Engineering, Science, and Management War Training Program in cooperation with various educational institutions, for the purpose of instructing industry in methods of providing better quality of war materiel for the Armed Services. Several countries, including England, Canada, and Australia, reproduced two or more of these standards as national emergency or war standards. General distribution of the standards has been wide—more than 40,000 copies of Z1.3-1942, for example, have been sold to date.

In 1953, the American Society for Quality Control accepted an invitation, tendered by ASA, to serve as proprietary sponsor for these standards. One of the duties of the sponsor was the establishment of a national consensus on approval of the standards by industry. In 1956 a canvass of industry was instituted by the Society's committee responsible for standards—the ASQC Standards Committee.[1] During the canvass some 49 organizations, believed to have a substantial interest in the subject of quality control, were contacted. All but three of the interested organizations approved the standards circulated by the ASQC Standards Committee. Subsequent contacts with these three organizations indicated approval by two, and approval by the third after incorporating certain proposed changes. Finally, a check with all the original respondents indicated no objections to the just-mentioned changes. Approval by the American Standards Association followed in November 1958.

The new standards have now been published by the American Standards Association and copies can be obtained as follows:

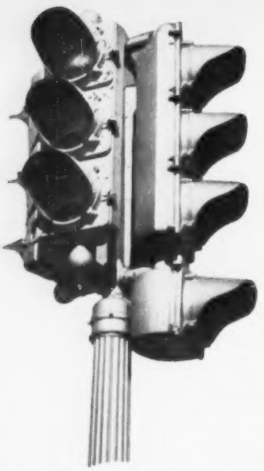
Guide for Quality Control, Z1.1-1958, and Control Chart Method of Analyzing Data, Z1.2-1958, (in one volume) $2.25

Control Chart Method of Controlling Quality During Production, Z1.3-1958, $2.50

These standards are also recognized as new ASQC standards, with the designations ASQC Std B1-1958; ASQC Std B2-1958; ASQC Std B3-1958. Copies may be obtained from the American Society for Quality Control, Inc, 161 West Wisconsin Avenue, Milwaukee 3, Wisconsin, as well as from the American Standards Association.

MR DODGE is retired (1958) quality results engineer, Bell Telephone Laboratories, Inc, now Professor of Applied and Mathematical Statistics, University College, Rutgers University. He was chairman of the ASA War Committee that prepared the American War Standards on quality control, first published in 1941 and 1942. He is now chairman of the American Society for Quality Control's Standards Committee.

[1]Membership of the ASQC Standards Committee: Irving W. Burr, Purdue University; W. Edwards Deming, New York University; E. L. Grant, Stanford University; R. E. Wareham, Consultant in Quality Control; H. F. Dodge, chairman.



Traffic Signals Up To Date

by MARBLE J. HENSLEY

SPECIFICATION OF COLOR LIMITS for the orange lens that is used in traffic signals to indicate "Wait" is one of the important changes in the 1958 revision of American Standard specifications for traffic control signal heads and controllers. Up to this time there have been no officially defined boundaries for the orange color so that some lenses have appeared almost red while others have been almost amber. The change to provide a standard orange was made in the American Standard Adjustable Face Traffic Control Signal Head Standards, D10.1-1958, one of the three standards for traffic control signals that have now been brought up to date.

The revision of all three standards was completed recently by the Institute of Traffic Engineers, sponsor, and all have been approved by the American Standards Association. The other two are: Pre-Timed, Fixed Cycle Traffic Signal Controllers, American Standard D11.1-1958, and Traffic-Actuated Traffic Controllers and Detectors, American Standard D13.1-1958.

The purpose of these three American Standards is to provide standard recommendations that will help to bring about greater efficiency and uniformity in traffic control equipment throughout the United States. Developed by the technical committee on traffic signals of the Institute of Traffic Engineers, they were first issued as American Standards in 1943 and 1951, and since that time have been widely adopted throughout the country.

In detail, the revisions provide the following changes:

Signal Heads, D10.1-1958—

A signal head, as defined in the standard, is an assembly containing one or more signal faces, a signal face being that part of a signal head that controls traffic in a single direction. Indications for directing vehicles in turning may be included in a signal head.

The standard recommends the materials and construction of the housings, and the minimum values of light transmission as well as the chromaticity limits for the colors of the signals. The red, yellow, and green colors used in traffic signalling, and the orange used for control of pedestrians are covered.

In addition to establishing, for the first time, color limits for the orange lens, the revised edition offers a redesigned chromaticity chart for all the lens colors. More modern terminology and more easily defined values are used. These changes were made in order to assist in the control and inspection of lenses during production.

A major change was also made in the design of the arrow lens. The new lens has a wider stroke to allow more light to be emitted from the arrow. This is most helpful during the daytime, and yet is not too brilliant for nighttime use, it is believed. The requirements for covering the lens around the arrow were strengthened to require a dull or dark gray enamel of additional thickness so that it totally hides all light from a 150-watt lamp. At the same time, changes have been made in the requirements for the glass reflectors. The back surface originally was of sufficient thickness to hide the light from a 100-watt incandescent traffic signal lamp. Now, this has been changed so that all light from a 150-watt lamp must be hidden.

The values of the candlepower chart have been changed in order to obtain better "punch" from the traffic signal unit. This was accomplished by deleting all references to maximum candlepower values above the horizontal axis. It was the opinion that there was a need for greater light output directed toward an approaching vehicle rather than toward a waiting vehicle.

To achieve more uniformity in the use of traffic signal lamps, the standards were revised to refer to lumen output rather than wattage. Three series of traffic signal lamps are proposed, with the lumen output held constant and the wattage allowed to vary in order to produce bulbs with longer life.

Pre-Timed, Fixed Cycle Controllers, D11.1-1958—

The traffic signal controllers covered by this standard are those operated either by an automatic controller or by means of a manual switch, as well as those in which a "Walk" interval for pedestrians is actuated by a

MR HENSLEY, City Coordinator, Chattanooga, Tennessee, is chairman of the Institute of Traffic Engineers' Committee on Traffic Signals.

pedestrian detector. The standard gives general design requirements, requirements for non-interconnected controllers, for future interconnected controllers, interconnected controllers, and for the master controller.

The definitions of terms were revised to agree with definitions in the other two standards so that there is now uniformity in definitions throughout the standards. There are also some new items defined, such as "reset interrupter" and "circuit contact cam shaft."

The interval sequences that had been shown in the previous specifications were omitted. In an effort to show typical signal sequence used in traffic signal controllers, many complicated sequences had been shown in the old standards. The committee believed that the engineer would be capable of determining the sequence required, and that there was no reason to include sequences that might be misunderstood in the standard.

Traffic-Actuated Controllers, D13.1-1958—

A traffic-actuated controller is an automatic controller for supervising the operation of traffic control signals in accordance with the varying demands of traffic as registered with the controller by detectors or push buttons. This standard covers a number of different types of traffic-actuated controllers, including those that are actuated by pedestrians and those that are actuated both by pedestrians and by vehicles. It also covers traffic-actuated controllers with speed control functions, as well as vehicle, pedestrian, and radar vehicle detectors and associated equipment. These are minimum design and operating requirements.

The major changes were the addition of specifications for newly developed types of control equipment, and, again, as in D11.1-1958, removal of all references to typical signal sequences.

Of the several new sections that were written, one was for full traffic-actuated controllers having two traffic phases and an exclusive pedestrian-actuated phase. Another was for two-phase controllers with an extended all-red clearance period. New sections were also written on intersectional traffic-actuated speed controllers and on radar vehicle detectors. The first of these installed at an intersection provides signal indications that have the effect of limiting the speed of approaching vehicles. The radar vehicle detectors are installed over the roadway and are actuated by the passage of a vehicle through the field of microwave energy that is emitted by the detector.

Copies of these revised American Standards can be obtained as follows:

Adjustable Face Traffic Control Signal Head Standards, American Standard D10.1-1958 (Revision of D10.1-1951) 50 cents

Pre-Timed Fixed Cycle Traffic Signal Controllers, American Standard D11.1-1958 (Revision of D11.1-1943) 50 cents

Traffic-Actuated Traffic Controllers and Detectors, American Standard D13.1-1958 (Revision of D13.1-1950) 50 cents

TRAFFIC SIGNALS were installed and operated quite early in Cleveland, Ohio. The control system was designed to give clear signals to approaching vehicles and to do away with the possibility of conflicting signals. The red light was placed on the near side of the intersecting street and the green light on the farther side. All signals were controlled by switches placed in the officer's booth. To clear the crossing in emergencies, the officer would throw a switch that sounded an alarm bell and automatically turned on the red lights at all corners. Popular Mechanics, 1915

Note: The first American Standard for traffic lights was approved by the American Engineering Standards Committee in 1927. This defined and recommended as the uniform national system red for stop, green for go, and yellow for caution. Standards covering the three types of automatic signals described in this article were first approved as American Standard in 1943.

Photo—above left: David W. Corson from A. Devaney, Inc., N.Y.

This is the nineteenth installment in the current series of rulings as to whether unusual industrial injury cases are to be counted as "work injuries" under the provisions of American Standard Method of Recording and Measuring Work-Injury Experience, Z16.1-1954. The numbers in parentheses refer to those paragraphs in the standard to which the cases most closely apply. These cases are issued periodically by the Z16 Committee on Interpretations.

Case numbers in the current series start with 400. Cases 400-500 have been reprinted with an index prepared by the National Safety Council. To make it easy to locate all cases applying to any section of the standard, the index is arranged both numerically by paragraph number of the standard and numerically by case number. Each index reference includes a brief description of the case. Reprints are 75 cents per copy, available from ASA.

Sectional Committee Z16 is sponsored by the National Safety Council and the Accident Prevention Department of the Association of Casualty and Surety Companies.

? ? ? ? ? ? ? ?ARE THESE CASES WORK INJURIES? ? ? ? ? ? ? ?

Case 610 (5.2)

An employee was cutting insulating blankets with a scissors. In order to do this he was leaning over the cutting table. While he was leaning over cutting, a pain occurred in his back which resulted in four days lost from work. The employee was doing the work in the usual manner—the same way he had done it many times before.

The doctor said that ordinarily merely leaning over a table to cut an insulating blanket with scissors should not produce back symptoms either as an aggravation of a previous injury or as a new injury. He believed, however, that if an individual placed himself in an unbalanced situation and then was forced to support a heavy load in so cutting the blanket, quite conceivably such an injury, either as an original or as an aggravation of pre-existing damage, could occur by the simple mechanics of stressing a structure which was out of balance. In the doctor's opinion there were multiple variables in the genesis of back pain, making pain from practically any situation a possibility, although in most individuals merely leaning over would not start trouble.

Decision: The committee concluded that this case should be counted in the work injury rates on the basis that paragraph 5.2 (a) had been satisfied, and that in connection with paragraph 5.2 (b), although there was no clear-cut decision by the doctor, the doctor did say that the injury could have occurred from the incident.

Case 611 (5.6)

A sailor, before mustering for guard duty, was in the Master-at-Arms shack watching another sailor clean his fingernails with a pocket knife (his personal property). Remarks were exchanged as to the sharpness of the knife. The sailor in question asked the owner to hand the knife to him, and he did so, with the knife blade extended. The sailor, after receiving the knife, made several stabbing motions at his chest. One of these motions resulted in the knife's penetrating his clothing and his chest, inflicting a deep wound which required hospitalization and absence from duty.

Decision: The committee decided that this injury should be included in the work injury rates. The members considered that the injury arose out of horseplay, and that the time just prior to muster should be considered the same as the time before an industrial employee punches the time clock (after he has entered company premises).

Case 612 (5.6)

A sailor was playing basketball near an aircraft hanger. The ball rolled toward the sentry on duty, and the sentry shot the sailor with a .38 caliber pistol. There were conflicting reports as to whether the sailor was on duty or off duty, whether the ball was directed toward the sentry intentionally or accidentally, and whether the sentry fired as part of his duty or whether is was due to an involuntary recoil when the ball was bounced toward him. The shell hit the sailor in his right thigh. As a result the injured was off duty.

Decision: The committee decided that this case should be included in the work injury rates. The members believed that whether this might have been horseplay or whether it might have arisen out of employment, it should be counted.

Case 613 (5.6)

The enlisted men had returned to their work area in the salvage yard prior to mustering after the lunch hour. One of the sailors, prowling into an aircraft in the work area during this time before mustering, found a drift bomb. The plane was in the salvage area for survey, but the bomb had been missed during prior de-arming of the plane. The drift bomb was tossed by the finder to another sailor who missed catching it, and it hit the ground but did not explode. The sailor who had failed to make the catch picked up the bomb, and though cautioned by others sailors in the area concerning the possibility of explosion, he started pounding it against a tractor which was parked in the area during the lunch period. The bomb exploded, injuring his hand, causing him to be hospitalized and resulting in lost time.

Decision: The committee decided that this case should be included in the rates on the basis that the injury arose out of horseplay, and the time just prior to muster should be considered the same as the time before an industrial employee punches the time clock (after he has entered company premises).

Case 614 (1.2.4)

A die repairman was carrying a finished door panel in the overhead position from the last line operation to a checking fixture. In doing so, he caught his right foot in a door rack, causing him to trip and fall.

A half-hour after the accident occurred, the employee reported to his supervisor that he had sprained his right ankle. At that time he believed the injury was minor, and only on instructions from his supervisor did he report to the medical department where he was treated for a sprained ankle by the application of ice packs.

That same evening, which was Friday, the employee's ankle became painful, so he called his own doctor and was told to report to him the following morning. Through x-rays the doctor found that the employee had a torn ligament with several bone chips in his ankle, and a cast was applied to his foot. The employee was not scheduled to work Saturday or Sunday, but did report Monday morning as scheduled, and worked his regular shift that day. He reported for work on Tuesday, but asked for permis-

sion to leave the plant early and go home because of pain in his right foot. The following day the employee did not return to work, and lost several days thereafter.

The employee's doctor, authorized by the company to treat this employee, stated that if there was work available which the employee could perform, there was no reason why he should not be working. The employee was notified of this belief of the doctor, but at that time the company learned that the employee had broken his cast and had returned to the doctor who had recast the foot and informed the employee to remain off his foot for 48 hours.

Decision: The committee decided that this injury should be included in the work injury rates. The members believed that the cast was an essential element in the treatment of the injury, and since in order to make the second cast effective a 48-hour period of inactivity was required, this inactivity was a part of the treatment, and must be considered a period of disability.

Case 615 (5.2)

A house heating installation man parked his truck in the garage after he had completed his day's work. He opened the door on the driver's side, placed his left foot on the running board, and when getting out from under the steering wheel he felt a slight pain in his lower back. He was incapacitated nine calendar days. Prior to the incident the employee had been installing house heating equipment which was not laborious work, and he had had no discomfort. The physician authorized to treat the case was not satisfied that the incident could have produced the back pain.

Decision: The committee decided that this case should not be included in the work injury rates on the basis of the facts presented and the doctor's opinion.

Case 616 (5.2)

A heating serviceman carried a blower weighing 30 pounds from the back porch to the basement. When he stooped to place the blower on the floor, he felt a mild pain in his lower back. He installed the blower (his last job for the day), returned to the office where he did not report the incident to his supervisor, and left for his home. The following day was the employee's day off. He did not return to work on his scheduled day, and reported that on his day off he was working on his lawn and when he got down to pull a weed he had difficulty getting up. He was disabled for 17 calendar days.

The physician authorized to treat the case did not believe that the incident of stooping to place the blower on the floor could have caused the lost time.

Decision: The committee decided that this case should not be included in the work injury rates on the basis of the doctor's opinion.

Case 617 (5.2)

No decision rendered. Not to be used as a precedent.

Case 618 (5.13)

A hooker in the steel storage area was in the process of "breaking down" a rack of coils. He was aided by a crane in the area. In this process of rearrangement six coils were tiered; that is, the three bottom coils of the rack were bound together with standard binder chain, and wooden wedges were placed in position at the outer ends of these three bottom coils; two coils were situated on top of the three; and one coil on the very top. The coils weighed from 38,850 pounds to 47,300 pounds.

The employee was walking toward the rack, where there were three bottom coils, with the intention of binding them with a binder chain before tiering additional coils on top of the bottom three which had already been placed. As he was walking he was struck in the right rear buttock and hip area when the binder chain broke and permitted the end coil behind him to slide on the rack rail. He was struck in a manner that caused him to strike his left front hip area against the edge of the coil. He stated later that he had heard a "snap" behind him and had attempted to move out of a crush point, but did not have time to get completely clear before he was struck.

He was taken to the hospital where no injury was evident. However, for precautionary reasons he was kept in the hospital for observation and was subsequently referred to a kidney specialist. The specialist recommended hospitalization be extended to a two-week observation period. The man was hospitalized a total of 11 days, at the end of which time it was medical opinion that only a slight injury had occurred and that the employee could have returned to work without any permanent impairment or temporary total disability.

Decision: The committee decided that this injury should be included in the work injury rates on the basis that paragraph 5.13 specifically states that the allowable observation period for a nondisabling injury shall *not exceed* 48 *hours*, and the employee in this case had been hospitalized for 11 days.

Case 619 [A1.6 (a)]

A doctor, driving a company car, was driving from his home to the hospital to begin his normal duties for the day. He was not making an emergency call or a house call. While driving to the hospital he was injured in an automobile accident. The company questioned whether such an accident would come under paragraph A1.6 (a) or under A1.6 (d).

Decision: The committee decided that this case should not be included in the work injury rates on the basis that the doctor appeared to have a regular office at the hospital, and his employment for the day normally started at that office. Travel from his home to that office or from that office to his home would come under A1.6 (a), and an injury experienced in the course of such travel would not be counted. However, if the doctor started from home to make a house call away from his office, and was in the course of that travel at the time of an accident, the case would be counted as in A1.6 (d), Example No. 1.

Case 620 (5.17)

An employee of a city transit authority was riding on a subway train as a passenger, going from one place of assignment to another. He sustained a disabling injury when the train was involved in a collision with another train. The employer wondered whether this injury should be considered in the course of employment since the injured was in the employ of the management operating the common carrier.

Decision: The committee concluded that this injury should not be considered industrial, and should not be included in the work injury rates on the basis of the wording of paragraph 5.17.

Case 621 [1.5 (a)]

A locker room attendant at a city-owned swimming pool climbed up on top of a set of lockers to inspect a litter of kittens which had been born there. Upon his approach to the kittens, the mother cat jumped and struck the employee in the face and knocked him from the lockers to the floor. His leg was broken in three places as a result of this fall. The employee was not authorized to climb on top of the lockers to inspect the litter of kittens.

Decision: The committee decided that this case should be included in the work injury rates on the basis of provisions of 1.5 (a) relating to "incidental and related activities not specifically covered by the assignment." The members believed that an assignment as locker room attendant would by inference include keeping track of what went on in the premises, and although the employee was not specifically authorized to climb up and inspect the cat's nest, neither was he prohibited from doing so.

Company Member Conference Plans Program

SPRING MEETING
Kansas City, Mo.
May 6 and 7, 1959

SOME NATIONAL PROBLEMS and their effect on company standards work will be emphasized at the Spring Meeting of the Company Member Conference of the American Standards Association May 6 and 7. The meeting is being held at Kansas City, Missouri. Under the chairmanship of J. M. Goldsmith, Sheffield Division, Armco Steel Corporation, Kansas City, the program is now nearly completed.

The vital role of standards in research and development will be the theme of the first session. J. R. Townsend, special assistant to the Assistant Secretary of Defense, Research and Development, and president of the American Standards Association, will present his views on the urgent problems concerned with research and how standards are related to them. A panel discussion will follow. Charles Stockwell, International Harvester Company, will serve as moderator for this session.

Charles W. Bryan, vice-president of Pullman, Inc, and member of the Board of Directors of ASA, will discuss the American Standards Association and its relation to its company members. Roy P. Trowbridge, General Motors, will draw on his experience in Europe last summer as leader of the U.S. delegation to the meeting of ISO Technical Committee 1, Screw Threads, to discuss the threat to American mass production from lack of international standardization. Following these papers, time is allowed for questions and discussion from the floor. ASA's managing director, Vice Admiral G.F. Hussey, Jr, will serve as moderator.

A "let's get acquainted" hour will follow the business sessions.

Value analysis and standards will be the subject of the Thursday morning session, May 7. K.A. Cruise, Bendix Aviation, Kansas City, is in charge of this session. Mr Cruise is District 3 chairman of the Standardization and Value Analysis Committee of the National Association of Purchasing Agents.

Thursday afternoon will be devoted to plant tours. These will cover the Sheffield Division, Armco Steel Corporation (Bolt and Forged Products Plant), the TWA International Overhaul Base, and the Corn Products Company.

The Company Member Conference invites anyone interested in company standards to attend these sessions. Registration fee for the entire meeting, without lunches, will be $2.00. However, arrangements are being made for the group to lunch together both Wednesday and Thursday at a charge of $3.00 for each day, making a total of $8.00 for registration, including lunches.

For further information, write Henry G. Lamb, Secretary, Company Member Conference, American Standards Association, Inc, 70 East 45 Street, New York 17, N.Y.

It's Time to Nominate

for the Howard Coonley Medal and the Standards Medal

NOMINATIONS FOR 1959 AWARD of The Howard Coonley Medal and The Standards Medal are now being received by the American Standards Association. You are invited to submit the name of an executive who has rendered a great service in advancing the national economy through voluntary standards as recipient of The Howard Coonley Medal. You are also invited to submit the name of an individual who has shown outstanding leadership in the development and application of voluntary standards as recipient of The Standards Medal.

In the past, The Howard Coonley Medal has been awarded to The Honorable Herbert Hoover, Mr Coonley himself, William Batt, Senator Ralph E. Flanders, Thomas D. Jolly, Dr Harold S. Osborne, Frederick S. Blackall, Jr, Roger E. Gay, and John R. Suman.

The Standards Medal has been awarded to the late Dr P. G. Agnew, Frank O. Hoagland, Perry L. Houser, John Gaillard, James G. Morrow, the late Charles Rufus Harte, John R. Townsend, and William P. Kliment.

Your nomination should be made on a form that can be obtained by writing the American Standards Association. Nominations should be received at ASA headquarters not later than June 30, 1959.

NEW BOOKS

MÉMENTO DE L'INGÉNIEUR DE NORMALISATION D'ENTERPRISE.

1958. 349 *pp. Association Francaise de Normalisation (AFNOR),* 23 *rue Notre-Dame-des Victoires, Paris* 2, *France.*

REVIEW BY FRANK PHILIPPBAR, STANDARDS DEPARTMENT, AMERICAN SOCIETY OF MECHANICAL ENGINEERS

"Notes for the Standards Engineer of a Company" begins, in the Preface by Mr Salmon,[1] with the statement "Standardization is a school for modesty," Mr Salmon explains that, since the essence of standardization is collective effort and anonymous authorship, no authors will be listed for this volume. This attitude commands respect, for the book is certainly something to be proud of.

If I were to title this book in English to indicate its contents most clearly, I would call it "Introduction to Company Standards and Standardization for the Engineer." It is not a comprehensive book, and does not try to be, but it gives any engineer a start in company standards work and provides him with principles and a sound basis on which to work. Of particular value is the emphasis given to the personal and psychological problems which will face the standards engineer. They are discussed in a practical degree not readily found in American books and articles. In fact, the practical level on which the book is written is one of its best features. As an example, a longstanding problem has been what type of organization should be set up so that a standards department can keep down the number of "specials," while at the same time not having supervision of the design department. "Memento" points out this problem, but does not go into the managerial aspect. It only suggests that if "specials" are specified, the designer be required to answer a questionnaire that is so difficult that it necessarily requires a thorough analysis of the design and will explain what functions are required that a "standard" item will not perform — an eminently practical idea. This is not the only solution, of course, but it is a step in the right direction.

The book emphasizes that standards can increase costs instead of decrease them, and explains exactly how this can come about. The danger of getting a special item instead of a standard stock item in purchasing, merely because different wording or terminology is used, is pointed out, together with the necessity of close cooperation between standardization and purchasing.

One statement is made that I think expresses an important truth: though buyers searching for standardized products may not be able to find them, one does not find that manufacturers cannot sell their products because their items conform to a standard.

Oddly enough, heavy emphasis is laid on what we would call the "team" concept in a company. It is most important, the engineers of AFNOR say, that everyone in a company must be conscious of *being able to do something* for a new or revised standard in that company. This is, of course, a part of "selling" standardization, not to management, but to co-workers in the firm. At all events, the idea must be eliminated that standards are instructions superimposed from above. To this end, they recommend conferences, personal interviews, and other methods.

Many practical examples are given, mostly in the experience of French firms, but also some from the United States, of the monetary value of simplification and standardization. Here the authors find themselves in somewhat of a dilemma: they wish to emphasize the creative aspect of standards work, but since the clearest examples of money-saving are in the field of simplification they are forced to use them to illustrate the value of standards. There are also some formulas and graphs predicting such things as the number of pieces that can be eliminated from a range of sizes, the stock cost saving, and the cost vs length of a production run.

Reasons for individual and company participation in national and international standards activities are summarized. They are solid reasons and they are effectively presented.

An extensive appendix contains laws and regulations pertaining to AFNOR, AFNOR procedure, ISO procedure, a suggested numbering system for company standards, a brief coverage of European Community standardization, and a bibliography that includes many items from THE MAGAZINE OF STANDARDS and American productivity reports.

As an irrelevant sidelight, unsalable products (because of lack of demand) are called "nightingales" in colloquial French, and a blank ruled form is a "grating."

[1]General Engineer P. Salmon, Commissioner for Standardization, French Ministry of Industry and Commerce. The Standardization Commission, under the direction of Mr Salmon, supervises the activities of AFNOR, the French national standards association.

STANDARDIZATION–WHAT'S IN IT FOR ME? *Proceedings of the Ninth National Conference on Standards.* 1958. *American Standards Association,* 70 *East* 45 *Street, New* 17, *N. Y.* $4.50. Emphasis on the results of standardization in industry, government, and for the consumer. Papers by outstanding individuals in many fields present the way standard methods and specifications act as foundations in industrial operations; what international standardization means to U.S. industry; how standards make money for individual companies; nuclear standards and industry's responsibility; how standards aid machine tool progress; how producers and consumers benefit from textile standards and from electronic standards; how safety standards protect the public; and what photographic standards mean to the photographer.

THE CHEMICAL INDUSTRY CAN'T BUY HALF AS WELL AS IT KNOWS HOW. *Chemical Industry Advisory Board, American Standards Association,* 70 *East* 45 *Street, New York* 17, *N. Y. No charge.* Presents estimates by representatives of the chemical industry and makes the point that the chemical industry could save up to $20,000,000 yearly if it had adequate uniform standards available for most of the things it must buy.

The booklet explains the organization and activities of the Chemical Industry Advisory Board, which, within the framework of ASA, initiates the development of new standards for the chemical industry.

GAILLARD SEMINAR ON INDUSTRIAL STANDARDIZATION

Dr John Gaillard, consultant on industrial standardization, will hold his next five-day seminar on this subject in the Engineering Societies Building, New York City, from June 22 through 26, 1959. His seminars are intended to assist top management in establishing the administrative setup and procedure for most effective handling of standardization work in the individual company, and training staff men in the functions of the standards engineer, including the art of writing specifications. So far, the seminars have been attended by 395 men representing 219 organizations in the United States and four other countries.

For details and registration, write to Dr John Gaillard at 135 Old Palisade Road, Fort Lee, New Jersey.

STANDARDS FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering copies of standards, please refer to the number following the title.

NOTE: A new shipment of 101 English translations of German standards has been received by the American Standards Association, thus bringing the total number of translated German standards now available to 334. A list of all these standards is available upon request.

621.3 ELECTRICAL ENGINEERING

Austria (ONA)

Oil transformers, 50 hz, 50 to 630 kva, and up to 30 kv ÖNORM E 4702
Thermometer case for oil transformers ÖNORM E 4761
Valve for oil sampling and ventilation in oil transformers ÖNORM E 4762

Canada (CSA)

Specification for single-phase distribution transformers, types ONS and LNS C2-1959
Construction and test of picture machines and appliances C22.2 No.118-1959
Heights of conductors above ground C22.3 No.1.5-1959

Germany (DNA)

Fabric insulating sleeves A DIN 40620
Plastic insulating sleeves B DIN 40621
Two-pole plugs for radio and television, connection 12 and 16 mm between pins DIN 41586
Receptacle for radio and television, antenna plug DIN 41587
2 stds for differently shaped and decorative lamps DIN 49812

Hungary (MSZH)

Threaded steel conduits for insulated electrical wiring MSZ 9854-56
Fittings for armoring steel tubes and boxes for insulated electrical wiring MSZ 9861-56

India (ISI)

Electrical indicating instruments IS:1248
Code of practice for electrical wiring and fittings in buildings IS:732

Japan (JISC)

High tension cables for automobiles JIS C 3405*
Low tension cables for automobiles JIS C 3406*
Fixed carbon film resistors JIS C 6402*
Designation system of power and transmitting tubes JIS C 7002*
Link fuse JIS C 8313*
Cartridge fuse and holder JIS C 8314*
Plug fuse and holder JIS C 8319*
General requirements for electrical fuses JIS C 8352*

New Zealand (NZSI)

Standard spec for 3-pin flat-pin plugs, plug-sockets, tap-ons, and cord-extension sockets with 10-amp, 250-volt (maximum) rating NZSS 198:1958
Standard spec for general requirements for electrical appliances and accessories NZSS 1300:1958

Rumania (OSS)

Insulated steel cord for telecommunication STAS 4484-58
Joint boxes for armoured underground cables with 3 conductors, up to 35 kv STAS 5766-58
Glass roller insulators STAS 5769-58

Sweden (SIS)

Testing of overhead line insulators and pin insulators for switchboards SEN 24 05
9 stds for different designs of telegraph overhead protective devices and their components SEN 24 11 01/9
Telegraph material: earthing terminal clamp SEN 24 11 18
Telegraph material: stay lock SEN 24 11 19
Telegraph material: fixing nail SEN 24 11 20
U-bolt straps for poles ½" and ⅝" SEN 24 11 25
U-bolts for poles ⅜", ½" and ⅝" SEN 24 11 27
Instrument transformers SEN 27 03 E*
Push-buttons, position indicating flags and position indicating lamps for electrical installations SEN 28 08 01 E*
Incandescent lamps. General properties and testing SEN 31 01 01
Incandescent lamps. Edison-type screw lamp caps, types E10, E14, E27 and E40. Dimensions SEN 31 01 40
5 stds for incandescent lamps. Small bayonet cap BA 9s, B 15, BA 15, BA 20, BA 21, B 22. Dimensions SEN 31 01 41/5
3 stds for incandescent lamps. General service lamps. Rated output up to and including 60 W, above 60 W up to and including 250 W, above 250 W. Data, properties and testing SEN 31 03 01/3
Incandescent lamps. Pear-shaped lamps with small bulbs SEN 31 03 10
4 stds for different bulbs, types K, C, M and L SEN 31 03 90/3
Telegraph material: Staples for pole. U-staples SEN 24 11 29
Temporary service equipment. Terms SIS 50 48 01
Temporary service equipment. Arrangement of contacts, phase-connections and ratings for plugs SIS 50 48 02

United Kingdom (BSI)

Varnish-bonded glass-covered copper conductors: Round wire; metric units BS 1933:Part 3:1959
Untreated asbestos paper BS 3057:1958
Varnish-bonded glass-braided copper conductors: Rectangular conductors BS 3058:Part 2:1958
P.V.C.-insulated cables for power switchgear wiring BS 1231:1958
Enamelled copper conductors (enamel with vinyl acetal base). Rectangular conductors BS 1844:Part 2:1958
Standard test finger (for checking protection against electric shock) BS 3042:1958
Electric shaver supply units BS 3052:1958
Rotary switches for domestic electric cookers (A.C. only) BS 3055:1958

USSR

Nickle anodes GOST 2132-58
Ballast starters for fluorescent lamps GOST 8798-58
Telephone line wall junction box GOST 8810-58
Insulating materials for electric machines, classification in respect of thermal resistance GOST 8865-58

621.88 MECHANICAL ATTACHMENT AND FIXING

Hungary (MSZH)

Open-end wrenches, width across flats MSZ 220-57
Heights of hexagon nuts and bolt heads MSZ 221-57

United Kingdom (BSI)

Slotted grub screws BS 768:1958
Split cotter pins BS 1574:1958

Higher tensile steel "C" hooks
BS 3033:1958

USSR

Drawn steel sections for manufacturing Woodruff keys GOST 8786-58

621.882 SCREW FIXING. BOLTS. NUTS. WASHERS

Austria (ONA)

8 stds for fine metric thread: h=0.25, 0.2, 0.35, 0.5, 0.75, 2, 3 and 6 mm; theoretical values
ÖNORM M 1504/8,-10/11,-13

Hungary (MSZH)

4 stds for bolts and nuts assemblies
MSZ 2171/4-58
Turnbuckle, hexagonal type
MSZ 2187-57
7 stds for different plain and lock washers
MSZ 2204, 11, 13, 35/8-57
Flanged nut, unfinished MSZ 2263-57
10 stds for different keys and keyways
MSZ 2303/8,-20/3-57
Carriage bolts MSZ 2356-57
Flanged square head screws
MSZ 2440-57
2 stds for fitting screws, short and long-threaded MSZ 2457,-60-57
Screws for textile machinery, metric
MSZ 4183-57

Netherlands (HCNN)

Nomenclature of screws NEN 5500
Nomenclature of screwbolts NEN 5501

621.9 TOOLS. MACHINE TOOLS. MACHINING

Belgium (IBN)

Twist drills with straight shank
NBN 487

Germany (DNA)

Morse cone arbors for milling cutters
DIN 2086
3 stds for different shapes of metal cutting tools with hard metal tips
DIN 4972,-77,-81

Hungary (MSZH)

2 stds for mason's mortar vessel and ladle MSZ 238/9-57
Mortar mixing hoe MSZ 684-57
Markings for single point metal cutting tools MSZ 1258-57
High speed steel tipped lathe tools
MSZ 1290-56
Rubber and fabric mallet
MSZ 1519-57
6 stds for different milling cutter arbors, adapters, etc MSZ 3809/14-58
3 types of metal shearing machines
MSZ 5013/5-57
3 types of small lathes and shaping machines MSZ 5021/3-57
4 stds for different grinding machines
MSZ 5058/61-57
18 stds for different types of tool posts of drumhead capstan lathe
MSZ 5282-57
2 stds for universal milling machines, horizontal and vertical MSZ 5425/6-57
Power hacksaw MSZ 5430-57

Poland

9 stds for different twist drills
PN series M-59600
Pipe pliers, arc-joint type PN M-64475

Rumania (OSS)

Milling cutters, helical STAS 578-58
2 stds for metal slitting saws
STAS 1159,-61/-58

Switzerland (SNV)

3 stds for cylindrical and taper shaft ends
VSM 15270/2
Cylindrical shafts for electric motors
VSM 15273
Locksmith's hammer, weight 50 to 2000 g VSM 35700

691 BUILDING MATERIALS

Mexico (DGN)

Asphalt tiles C-34-1958
Vinyl tiles C-35-1958

Norway (NSF)

Structural timber NS 447

Poland

Terracotta tiles, different shapes
PN B-12032
Klinker tiles PN B-12034
3 stds for glass bricks, different shapes
PN B-13075/7

Sweden (SIS)

Module brick, type 1, dimensions
SIS 52 31 10
Roofing tiles, clay SIS 52 37 01
Concrete tiles. Test and material requirements SIS 52 47 01
Roofing tiles, concrete SIS 52 47 02
2 stds for hollow concrete blocks, dimensions SIS 52 48 10/1

Union of South Africa (SABS)

Standard spec for thermoplastic floor tiles with a bitumen and/or resinous binder
SABS 586-1957

744 TECHNICAL DRAWINGS

Austria (ONA)

Technical drawings: representation of views ÖNORM A 6061
Technical drawings: standard lettering
ÖNORM A 6010
Simplified and symbolized technical drawings for threads, screws and nuts
ÖNORM A 6074

United Kingdom (BSI)

Architects', engineers' and surveyor's scales: Plastic scales
BS 1347:Part 2:1959

news briefs.....

● F.G. WILSON, manager of safety, American Petroleum Institute, has been elected chairman of ASA's Safety Standards Board. Mr Wilson has been a member of the executive committee of the Board for several years and was elected vice-chairman in 1958. He has been active on a number of ASA sectional committees as alternate to the API representatives.

Mr Wilson became director of safety and fire protection services of the API Department of Technical Services in 1950, and served as secretary of the Central Committees on Accident Prevention and Fire Protection of the Institute until September 1955. At present he devotes his entire time to safety and is secretary of API's Central Committee on Accident Prevention. He has been with API since 1947 when he became assistant director of safety

F. G. Wilson

and fire protection. During the war he spent several years with the construction and refining divisions of the Petroleum Administration for War, after having served 15 years with the Gulf Oil Corporation.

On the national scene, he served for 11 years as secretary of the National Safety Council, Petroleum Section, and is currently API's special representative to the Council. He is a member-at-large of the Safety Council Industrial Conference and a member of the Council's Fire Prevention Committee.

William P. Yant, Mine Safety Appliances Company (see "Personality of the Month," February 1959), is vice-chairman of the Board.

The Board is supervising 57 ASA projects that are developing standards for protection of safety and health both in industry and of the public.

● A NEW DIVISION on materials sciences is being organized by the American Society for Testing Materials to coordinate and intensify development of knowledge of the fundamentals of materials. The new division, the first to be established by ASTM, will help to promote knowledge of engineering materials and tap new sources of knowledge for the Society's standardization activities. The division will concern itself with collection, establishment, and publication of basic information on materials and their properties, and will help to answer "why" materials are what they are.

The ASTM national directors, coming from many materials fields and industries, recognize the importance of placing more emphasis on fundamentals in view of the rapid growth of technology. Since its inception in 1898, the Society has published hundreds of technical papers and symposiums dealing with problems which are fundamental to our knowledge of why materials act the way they do. For example, a publication just being issued, "The Mechanism of Fatigue," deals almost entirely with the fundamentals of this phenomenon. The extensive nation-wide studies of corrosion-resisting properties of materials, of the effect of temperature on metals, and many activities carried on in technical committees concerned with petroleum products, cement, soils, electrical contacts, and a host of other materials, contribute to fundamental knowledge. The studies also reveal areas where more basic information is needed.

ASTM is in a unique position to provide a forum for materials scientists and engineers, as its activities cut horizontally across the entire materials field. Here there is common ground for the physicist, the chemist, and the engineer in a variety of fields—electrical, mechanical, civil, chemical, and many more.

Research activities relating to fundamentals under way in many of the committees will continue as now organized. The new division can assist or aid in coordination.

The recommendation for a new division is one of several initiated by the ASTM Long-Range Planning Committee. Other developments have included an Administrative Committee on Education in Materials, which has a program under way, and decisions to award certain Fellowships and "Grants-in-Aid" for materials study.

Actual development of the division has been entrusted to a group of four officers — President K. B. Woods, head, School of Civil Engineering, Purdue University; two ASTM vice-presidents: F. L. LaQue, vice-president and manager, Development and Research Division, The International Nickel Co, Inc, and A. Allan Bates, vice-president of research and development, Portland Cement Association; and Robert J. Painter, executive secretary.

DR FAITH WILLIAMS, one of the pioneers in the consumer goods work of the American Standards Association, died late last year. She had been under treatment for cancer for six years but had worked until two weeks before her death.

Dr Williams was one of the first members of ASA's Standards Council after its organization late in 1928. She represented the American Home Economics Association and took a leading part in the preliminary discussions and planning that led to acceptance by the Council of a program for development of consumer goods standards. When the Advisory Committee on Ultimate Consumer Goods (now the Consumer Goods Standards Board) was organized in 1935, she was one of its first members, serving as representative of the American Association of University Women. Dr Williams was vice-chairman of the Board from 1947-1950 and continued as a member until 1954. When she first became active in ASA, she was a member of the staff of the Bureau of Home Economics of the U.S. Department of Agriculture. She changed to the Department of Labor's Bureau of Labor Statistics in 1934. At one time she was chief of the cost of living division of the Bureau. Since 1952 she had been chief of the Bureau's Office of Labor Economics. Last summer she went to Stockholm as a member of the official U.S. delegation to the meeting of the International Statistical Institute. She received the Distinguished Service Award of the U.S. Department of Labor in March 1958 for her contributions to consumer economics.

● REPRESENTATIVES from the electrical industries of 33 countries will head for Madrid, Spain, early this summer to act on work under way in thirty technical committees and subcommittees of the International Electrotechnical Commission. The meetings will take place in Madrid, June 30 through July 10. The 28 committees that are meeting are listed in the table on facing page.

The Committee of Action, the executive group of IEC, will also meet to coordinate the actions taken by the committees and make plans for the coming year. In addition, the IEC Council, the general governing body on which all the national committees have representation, is holding a special meeting to consider new budget problems due to the rapidly growing technical program and increasing costs throughout the world.

As in previous years, arrangements are being made for delegates to visit industrial plants in the neighborhood in order to become acquainted with the country's electrical industry. A number of interesting social activities have been planned by the Spanish national committee of IEC, who are acting as hosts.

The Charles Le Maistre Memorial Lecture, an annual event in honor of the first secretary of IEC, will be presented by A.M. Nekrasov, president of the national committee of the USSR, this year.

Invitations to attend the IEC Madrid meetings as U.S. representatives have been sent by the USNC to individuals and organizations who are helping to coordinate the U.S. viewpoint on work being done by these IEC committees.

Other IEC technical committees are holding meetings in Paris, June 22-27, and in London, June 22-30. Meeting in Paris are Technical Committees 14, Power Transformers (United Kingdom, secretariat); 14A,

Magnetic Steel (USA, secretariat); 22, Power Converting Equipment (Switzerland, secretariat); 22-2, Semi-conductor Rectifiers (Sweden, secretariat). Also, Technical Committee 30, Extra-High Voltages (Switzerland, secretariat) will meet in Paris, June 16 and 17.

Technical Committee 5, Steam Turbines (USA, secretariat) is meeting in London, June 22-30.

A number of committees are also planning to hold meetings in Germany in September. These are Technical Committee 12, Radio-Communication (Netherlands, secretariat); 12-1, Measurements; 12-2, Safety; 12-6, Radio Transmitters; and 12-7, Climatic and Durability Tests for Radio-Communication Equipment. The Netherlands holds the secretariat for all these committees. Subcommittee 39/40, Sockets and Accessories for Electronic Tubes and Valves (Netherlands, secretariat) also is planning to hold its meeting in Germany in September. In addition, Technical Committee 40, Components for Electronic Equipment (Netherlands, secretariat), and many of its technical subcommittees will schedule meetings for September in Germany. These include 40-1, Capacitors and Resistors (Netherlands, secretariat); 40-2, R.F. Cables and R.F. Connectors (Netherlands, secretariat); 40-3, Piezoelectric Crystals (Netherlands, secretariat); 40-4, Connectors and Switches (Netherlands, secretariat); 40-5, Basic Testing Procedures (United Kingdom, secretariat); 40-6, Parts Made of Ferro-Magnetic Oxides (Netherlands, secretariat).

Preliminary plans are now under way for meetings of Technical Committee 42, High-Voltage Testing Techniques (Sweden, secretariat) and of Technical Committee 38, Instrument Transformers (United Kingdom, secretariat), as well as a number of subcommittees of Technical Committee 2, Rotating Machinery (United Kingdom, secretariat) during September and October.

● AN INVESTIGATION OF THE PERFORMANCE of magnetic tape, used in recording the data transmitted by guided missiles and satellites, is being conducted by the National Bureau of Standards for the Air Force. The quality of such tape directly influences the useful-

IEC Committees Meeting at Madrid, June 30-July 10

IEC Committee	No.	Secretariat	U.S. Advisory Group
Nomenclature	1	France	Sectional Committee on Definitions and Electrical Terms, C42
Graphical Symbols	3	Switzerland	Sectional Committee on Graphical Symbols and Designations, Y32
Hydraulic Turbines	4	USA	Special Group
Electric Traction Equipment	9	France	Sectional Committee on Rotating Electrical Machinery on Railway Locomotives, etc, C35
Switchgear and Controlgear	17	Sweden	Sectional Committee on Power Switchgear, C37, and Committee C19
High-Voltage Switchgear and Controlgear	17A	Sweden	Committee C37 and Sectional Committee on Industrial Control Equipment, C19
Low-Voltage Switchgear and Controlgear	17B	France	Sectional Committees C37 and C19
Electrical Installations in Ships	18	Netherlands	AIEE Committee on Marine Transportation
Cables	18-1	Netherlands	AIEE Committee on Marine Transportation
Protection	18-2	Netherlands	AIEE Committee on Marine Transportation
Radio Interference	18-3	Netherlands	AIEE Committee on Marine Transportation
Electrical Clearance and Creepage Distances	18-4	Netherlands	AIEE Committee on Marine Transportation
Internal Combustion Engines	19	USA	Special Group of Advisors
Electric and Magnetic Magnitudes and Units	24	France	Sectional Committee on Electric and Magnetic Magnitudes and Units, C61
Letter Symbols and Signs	25 Exp.	USA	Sectional Committee on Letter Symbols, Y10, and Abbreviations for Science and Engineering, Y1
Insulation Coordination	28	France	Special Group
Lamps and Related Equipment	34	United Kingdom	Special Group
Lamps	34A	United Kingdom	Special Group
Lamp Caps and Holders	34B	United Kingdom	Special Group
Auxiliaries for Fluorescent Lighting	34C	United Kingdom	Special Group
Primary Cells and Batteries	35	France	Sectional Committee on Dry Cells and Batteries, C18
Insulators	36	Italy	Sectional Committee on Insulators for Electric Power Lines, C29
Lightning Arresters	37	USA	Sectional Committee on Lightning Arresters, C62
Electronic Tubes and Valves and Analogous Semiconductor Devices	39	Netherlands	Joint Electron Devices Engineering Council
Electronic Tubes and Valves	39-1	Netherlands	Joint Electron Devices Engineering Council
Semiconductor Devices	39-2	France	Joint Electron Devices Engineering Council
Electric Fans	43	India	(None yet)
Electrical Equipment of Machine Tools	44	Switzerland	(None yet)

ness of the recorded information. For this reason, specification limits and quality control are needed in production. Standard methods of measuring the magnetic properties of the tape which will help make such control possible are the goal of the present study.

● AS THE U.S. MEMBER of the International Organization for Standardization, the American Standards Association has accepted the secretariat for two new subgroups of ISO Technical Committee 86 on Refrigeration. One is Subcommittee 6, Testing of Factory-Assembled Air-Conditioning Units; the other is Working Group 1 on Designation of Refrigerants. ASA is now engaged in collecting all the national standards or other widely accepted documents on this subject as a basis for the program of work for these two new groups.

AMERICAN STANDARDS

If your company is a member of the American Standards Association, you are entitled to receive membership service copies of these newly published American Standards. Find out who your ASA contact is in your company. Order your American Standards through him. He will make sure your company receives the membership service to which it is entitled.

Just Published

CHEMICAL

Common Name for the Pest Control Chemical *O,O*-dimethyl *O*-(2,4,5-trichlorophenyl) phosphorothioate: ronnel, K62.18-1958 $0.35

Common Name for the Pest Control Chemical 3,5-dinitro-o-toluamide: zoalene, K62.19-1959 $0.35

Common Name for the Pest Control Chemical *p*-chlorobenzyl *p*-chlorophenyl sulfide: chlorbenside, K62.20-1958 $0.35

Common Name for the Pest Control Chemical *n*-dodecylguanidine acetate: dodine, K62.21-1959 $0.35

Common Name for the Pest Control Chemical *O-O*-diethyl *S*-(ethylthio) methyl phosphorodithioate: phorate, K62.22-1959 $0.35

Sponsor: U. S. Department of Agriculture

Dilute Solution of Viscosity of Vinyl Chloride Polymers, Method of Test for, ASTM D 1243-58T; ASA K65.10-1959 $0.30

Sponsor: American Society for Testing Materials

ELECTRIC AND ELECTRONIC

Varnishes Used for Electrical Insulation, Methods of Testing, ASTM D 115-55; ASA C59.30-1958 $0.30

Silicone Insulating Varnishes, Methods of Testing, ASTM D 1346-57; ASA C59.36-1958 $0.30

Sponsor: American Society for Testing Materials

Glass Bulbs Intended for Use with Electron Tubes and Electric Lamps, Nomenclature for, C79.1-1958 (Revision of C79.1-1954) $0.80
Establishes a nomenclature system for use by industry in identifying glass bulbs used for lamps and electron tubes, including bulbs used for TV picture tubes. Revisions cover new and popular bulb shape classifications "BT," "GA," and "TD."

Sponsor: Electrical Standards Board

MECHANICAL

Instrument Precision Ball Bearings, Requirements for, B3.10-1959 $1.00

Sponsor: Mechanical Standards Board

PETROLEUM PRODUCTS AND LUBRICANTS

Carbon Residue of Petroleum Products, Ramsbottom Coking Method, ASTM D 524-58T; ASA Z11.47-1958 (Revision of ASTM D 524-52T; ASA Z11.47-1952) $0.30

Neutralization Value by Potentiometric Titration, ASTM D 664-58; ASA Z11.59-1958 (Revision of ASTM D 664-54; ASA Z11.59-1955) $0.30

Olefinic Plus Aromatic Hydrocarbons in Petroleum Distillates, ASTM D 1019-58T; ASA Z11.71-1958 (Revision of ASTM D 1019-56T; ASA Z11.71-1956) $0.30

Foaming Characteristics of Crankcase Oils, ASTM D 892-58T; ASA Z11.78-1958 (Revision of ASTM D 892-46T; ASA Z11.78-1953) $0.30

Effect of Copper on the Oxidation Rate of Grease, Test for, ASTM D 1402-58; ASA Z11.99-1958 $0.30

Sponsor: American Society for Testing Materials

PHOTOGRAPHY

Thiosulfate Content of Processed Black-and-White Photographic Film and Plates, Method for Determining the, PH4.8-1958 (Revision of PH4.8-1953) $0.80

Photographic Grade Aluminum Potassium Sulfate, PH4.150-1958 (Revision of Z38.8.150-1949) $0.35

Photographic Grade Chromium Potassium Sulfate, PH4.151-1958 (Revision of Z38.8.151-1949) $0.35

Photographic Grade Potassium Persulfate, PH4.303-1958 (Revision of Z38.8.181-1949) $0.35
Physical and chemical properties to insure satisfactory use for photographic processing purposes.

Sponsor: Photographic Standards Board

TEXTILES

Sewing Threads, Tentative Methods of Testing, ASTM D 204-57T; ASA L14.14-1959 $0.30

Sponsors: American Society for Testing Materials; American Association of Textile Chemists and Colorists

WOOD AND WOOD PRESERVATIVES

Veneer, Plywood, and Other Glued Veneer Constructions, Methods of Testing, ASTM D 805-52; ASA O7.1-1958 $0.50

Sponsor: American Society for Testing Materials

Evaluating the Properties of Building Fiberboards, Tentative Methods of Test for, ASTM D 1037-56T; ASA O8.1-1958 $0.50

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Status as of March 18, 1959

ACOUSTICS, VIBRATION, AND MECHANICAL SHOCK

In Board of Review

Magnetic Recording Instruments for the Home — Wire Size, Speed, Spools, Z57.4-

Sponsor: Institute of Radio Engineers

AUTOMOTIVE

In Standards Board

Specific Gravity of Concentrated Engine Antifreezes by the Hydrometer, Method of Test for, ASTM D 1122-58; ASA D14.3- (Revision of ASTM D 1122-53; ASA D14.3-1955)

Sponsor: American Society for Testing Materials

BUILDING AND CONSTRUCTION

In Standards Board

Gypsum Plasters, Specifications for, ASTM C 28-58; ASA A49.3- (Revision of ASTM C 28-57; ASA A49.3-1958)

Sponsor: American Society for Testing Materials

Billet-Steel Bars for Concrete Reinforcement, Specifications for, ASTM A 15-58T; ASA A50.1- (Revision of ASTM A 15-57T; ASA A50.1-1958)

Cold-Drawn Steel Wire for Concrete Reinforcement, Specifications for, ASTM A 82-58; ASA A50.3- (Revision of ASTM A 82-34; ASA A50.3-1936)

Sponsor: American Society for Testing Materials

Gypsum Wallboard, Specifications for, ASTM C 36-58; ASA A69.1- (Revision of ASTM C 36-55; ASA A69.1-1956)

Sponsor: American Society for Testing Materials

Ignition Loss and Active Calcium Oxide in Magnesium Oxide for Use in Magnesium Oxychloride Cements, Method of Test for, ASTM C 247-57; ASA A88.16- (Revision of ASTM C 247-52; ASA A88.16-1953)

Sponsors: American Society for Testing Materials; National Bureau of Standards

Building Brick (Solid Masonry Units Made from Clay or Shale), Specification for, ASTM C 62-58; ASA A98.1- (Revision of ASTM C 62-57; ASA A98.1-1958)

Sponsor: American Society for Testing Materials

Sewer Brick (Made from Clay or Shale), Specification for, ASTM C 32-58; ASA A100.1- (Revision of ASTM C 32-50; ASA A100.1-1954)

Sponsor: American Society for Testing Materials

Fireclay and High-Alumina Refractory Brick, Classification of, ASTM C 27-58T; ASA A111.5- (Revision of ASTM C 27-41; ASA A111.5-1956)

Basic Procedure in Panel Spalling Test for Refractory Brick, Method for, ASTM C 38-58; ASA A111.6- (Revision of ASTM C 38-52; ASA A111.6-1955)

Sponsor: American Society for Testing Materials

Structural Rivet Steel, Specifications for, ASTM A 141-58; ASA G21.1- (Revision of ASTM A 141-55; ASA G21.1-1956)

Sponsor: American Society for Testing Materials

Steel for Bridges and Buildings, Specifications for, ASTM A 7-58T; ASA G24.1- (Revision of ASTM A 7-56T; ASA G24.1-1957)

Sponsor: American Society for Testing Materials

Welded Steel Wire Fabric for Concrete Reinforcement, Specifications for, ASTM A 185-58T; ASA G45.1- (Revision of ASTM A 185-56T; ASA G45.1-1957)

Sponsor: American Society for Testing Materials

High-Strength Steel Castings for Structural Purposes, Specifications for, ASTM A 148-58; ASA G52.1- (Revision of ASTM A 148-57; ASA G52.1-1958)

Sponsor: American Society for Testing Materials

Areas in Hospitals and Related Facilities, Method of Determining, Z65.4-

Sponsors: National Association of Building Owners and Managers; Office of Education, Dept of Health, Education and Welfare

CHEMICAL

In Standards Board

Turpentine, Methods of Sampling and Testing, ASTM D 233-58; ASA K33.1- (Revision of ASTM D 233-36; ASA K33-1937)

Sponsor: American Society for Testing Materials

Raw Linseed Oil, Specifications for, ASTM D 234-58; ASA K34.1- (Revision of ASTM D 234-55; ASA K34.1-1956)

Sponsor: American Society for Testing Materials

Boiled Linseed Oil, Specifications for, ASTM D 260-58; ASA K35.1- (Revision of ASTM D 260-55; ASA K35.1-1956)

Sponsor: American Society for Testing Materials

CONSUMER GOODS

In Standards Board

Alkaline Detergents, Methods of Sampling and Chemical Analysis of, ASTM D 501-58; ASA K60.21- (Revision of ASTM D 501-57; ASA K60.21-1958)

Sponsor: American Society for Testing Materials

DRAWINGS, SYMBOLS AND ABBREVIATIONS

In Standards Board

Illustrations for Publication and Projection, Y15.1- [Revision of Z15.1-1932 (R1947) and Z15.3-1943 (R1947)]

Sponsor: American Society of Mechanical Engineers

Reaffirmation Being Considered

Letter Symbols for Acoustics, Y10.11-1953

Sponsor: American Society of Mechanical Engineers

ELECTRIC AND ELECTRONIC

American Standards Approved

400-Watt BT-37 (H1) Fluorescent Mercury Vapor Lamp, Dimensional and Electrical Characteristics of, C78.1304-1959 (Revision of C78.1304-1957)

400-Watt BT-37 (H1) Mercury Vapor Lamp, Dimensional and Electrical Characteristics of, C78.1305-1959 (Revision of C78.1305-1957)

Sponsor: Electrical Standards Board

In Board of Review

Dry Cells and Batteries, Specifications for, C18.1- (Revision of C18.1-1954)

Sponsor: National Bureau of Standards

Schedules of Preferred Ratings for Power Circuit Breakers, C37.6- (Revision of C37.6-1957)

Sponsor: Electrical Standards Board

In Standards Board

Television Luminance Signal Levels, Method of Measurement of, C16.31-

Sponsor: Institute of Radio Engineers

MECHANICAL

In Standards Board

Reamers, B5.14- [Revision of B5.14-1949 (R1955)]

Sponsors: American Society of Tool Engineers; Metal Cutting Tool Institute; National Machine Tool Builders' Association; Society of Automotive Engineers; American Society of Mechanical Engineers

Carbon and Alloy-Steel Nuts for Bolts for High-Pressure and High-Temperature Service, Specifications for, ASTM A 194-58T; ASA G38.1- (Revision of ASTM A 194-56T; ASA G38.1-1957)

Sponsor: American Society for Testing Materials

METALLIC COATINGS

In Standards Board

Electrodeposited Coatings of Nickel and Chromium on Steel, Specifications for, ASTM A 166-58T; ASA G53.3- (Revision of ASTM A 166-55T; ASA G53.3-1956)

Electrodeposited Coatings of Nickel and Chromium on Copper and Copper-Base Alloys, Specifications for, ASTM B 141-58; ASA G53.4- (Revision of ASTM B 141-55; ASA G53.4-1956)

Electrodeposited Coatings of Nickel and Chromium on Zinc and Zinc-Base Alloys, Specifications for, ASTM B 142-58; ASA G53.5- (Revision of ASTM B 142-55; ASA G53.5-1956)

Sponsor: American Society for Testing Materials

METALLURGY

In Standards Board

Zinc-Coated (Galvanized) Iron or Steel Sheets, Coils, and Cut Lengths, Specifications for, ASTM A 93-58T; ASA G8.2- (Revision of ASTM A 93-55T; ASA G8.2-1956)

Sponsor: American Society for Testing Materials

Structural Steel for Locomotives and Cars, Specifications for, ASTM A 113-58; ASA G39.1- (Revision of ASTM A 113-56; ASA G39.1-1957)

Sponsor: American Society for Testing Materials

Slab Zinc (Spelter), Specifications for, ASTM B 6-58; ASA H24.1- (Revision of ASTM B 6-49; ASA H24.1-1949)

Sponsor: American Society for Testing Materials

MISCELLANEOUS

American Standard Approved

Nursery Stock, Z60.1-1959 (Revision of Z60.1-1952 and addendum Z60.1a-1955)

Sponsor: American Association of Nurserymen, Inc

In Board of Review

Sieves for Testing Purposes (Wire Cloth Sieves, Round-Hole and Square-Hole Screens or Sieves), Specifications for, ASTM E 11-58T; ASA Z23.1- (Revision of ASTM E 11-39; ASA Z23.1-1939)

Sponsors: American Society for Testing Materials; National Bureau of Standards

In Standards Board

ASTM Thermometers, Specifications for, ASTM E 1-58; ASA Z71.1- (Revision of ASTM E 1-57; ASA Z71.1 1958)

Sponsor: American Society for Testing Materials

PHOTOGRAPHY

In Standards Board

Photographic Dry Plates (Inch and Centimeter Sizes), Dimensions for, PH1.23- (Revision of PH1.23-1956)

Sponsor: Photographic Standards Board

Microfilm Readers for 16- and 35-mm Film on Reels, Specifications for, PH5.1- (Revision of Z38.7.9-1946)

Sponsor: American Library Association

16mm Azimuth Test Film Magnetic Type, PH22.114-

Sponsor: Society of Motion Picture and Television Engineers

PIPE AND FITTINGS

In Standards Board

Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service, Specifications for, ASTM A 182-58T; ASA G37.1- (Revision of ASTM A 182-57T; ASA G37.1-1958)

Sponsor: American Society for Testing Materials

Forged or Rolled Steel Pipe Flanges, Forged Fittings, and Valves and Parts for General Service, Specifications for, ASTM A 181-58T; ASA G46.1- (Revision of ASTM A 181-57T; ASA G46.1-1958)

Sponsor: American Society for Testing Materials

Nickel Seamless Pipe and Tube, Specification for, ASTM B 161-58T; ASA H34.1- (Revision of ASTM B 161-49T; ASA H34.1-1955)

Nickel-Copper Alloy Seamless Pipe and Tube, Specification for, ASTM B 165-58T; ASA H34.2- (Revision of ASTM B 165-49T; ASA H34.2-1955)

Nickel-Chromium-Iron Alloy Seamless Pipe and Tube, Specification for, ASTM B 167-58T; ASA H34.3- (Revision of ASTM B 167-49T; ASA H34.3-1955)

Sponsor: American Society for Testing Materials

RUBBER

In Standards Board

Sample Preparation for Physical Testing of Rubber Products, Methods of, ASTM D 15-58T; ASA J1.1- (Revision of ASTM D 15-57T; ASA J1.1-1958)

Sponsor: American Society for Testing Materials

TEXTILES

American Standards Approved

Cotton Yarns, Methods of Testing and Tolerances for, ASTM D 180-57T; ASA L14.13-1959 (Revision of ASTM D 180-54T; ASA L14.13-1956)

Man-Made Staple Fibers, Methods of Testing, ASTM D 540-57T; ASA L14.33-1959 (Revision of ASTM D 540-44; ASA L14.33-1949)

Felt, Methods of Testing, ASTM D 461-57T; ASA L14.52-1959 (Revision of ASTM D 461-53; ASA L14.52-1955)

Spun and Filament Yarns Made Wholly or in Part of Man-Made Organic Base Fibers, Methods of Testing, ASTM D 1380-57T; ASA L14.90-1959 (Revision of ASTM D 1380-56T; ASA L14.90-1957)

Sponsors: American Society for Testing Materials; American Association of Textile Chemists and Colorists

WOOD AND WOOD PRESERVATIVES

In Standards Board

Round Timber Piles, Specifications for, ASTM D 25-58; ASA O6.1- (Revision of ASTM D 25-55; ASA O6.1-1958)

Sponsor: American Society for Testing Materials

Safety Code for Window Cleaning, A39—
Sponsor: National Safety Council

An up-to-date revision of the American Standard Safety Code for Window Cleaning, A39-1933, is being circulated for comment to all national groups concerned. The new edition includes up-to-date test methods and specifications for safety belts, attachments, and anchors. It also covers sectional ladders used on low windows.

A subcommittee is continuing to work on new safety codes for outside elevators used in window cleaning.

Wood Sawing Practice for Small Sawmills, B66—
Sponsor: The American Society of Mechanical Engineers

If the Mechanical Standards Board votes "yes" on a letter ballot now before it, this project will be withdrawn. The project had been organized in 1953 at the request of the Conservation Division of the Defense Production Administration and on recommendation of a general conference called to discuss the proposed project. Its purpose was to establish performance standards for equipment used by small sawmills with a view to securing increased precision of sawing and minimum waste of material.

The sectional committee, organized in 1953 with the ASME as sole sponsor, developed a handbook for small sawmill operators which was published as ASME Standard No. 109. Since the field of application of the handbook is relatively narrow, the sponsor has reported, it was not submitted to the American Standards Association for approval as American Standard. The ASME now suggests that the project be withdrawn, stating that the handbook "appears to satisfy the current needs of the industry and there are no further projects at present for Sectional Committee B66."

Code for Electricity Meters, C12—
Sponsors: Electric Light and Power Group; National Bureau of Standards

Advances in technology will be considered by the committee in its work on a revision of the American Standard Code for Electricity Meters, C12-1941. The committee decided recently to revise the standard to provide new test methods and up-to-date specifications.

Steel Raceways for Electric Wiring Systems, C80—
Sponsors: American Iron and Steel Institute; National Electrical Manufacturers Association

The request of the Aluminum Association of America for approval of its standard for aluminum conduit is being reviewed by Committee C80. Since the scope of the committee is limited to steel conduit, it would have to be changed to include conduits of aluminum and other metals.

Loading Platforms at Freight Terminals, MH8—
Sponsor: American Trucking Associations

A standard specifying the heights and minimum clearances that are needed to permit unobstructed maneuvering of trucks against loading platforms has been submitted for approval as American Standard by the Operations Council of the American Trucking Associations. Since the standard was submitted under the Existing Standards Method of the American Standards Association, ASA is canvassing the groups concerned to determine its acceptance. The standard applies to off-the-street shipping and receiving platforms of commercial business enterprises and motor freight terminal facilities. The Council reports that the recommended specifications have been in use for almost ten years and have been widely recognized by architects, motor carrier companies, and others constructing off-the-street shipping and receiving platforms.

Work on loading platforms was first started under a project identified as E12, initiated in 1937. This was intended to cover the principal dimensions of loading platforms for railroad cars and highway vehicles. However, at the request of the American Trucking Associations, which had been designated sponsor of Project E12, the project was withdrawn late in 1958. The sponsor pointed out that by far the largest number of loading platforms being built today are for the type of facilities covered in the new standard just submitted and that very little new construction has been undertaken since World War II on so-called combination railroad and trucking terminals covered in Project E12.

Specifications for Wood Poles, O5—
Sponsor: Telephone Group

A meeting is being held in Cleveland May 19-20 to consider revision of the American Standard Specifications and Dimensions for Wood Poles, O5.1-1948. The committee will study research data collected under the auspices of the American Society for Testing Materials for different tree species that might be suitable for use in poles. In calling the meeting, George Q. Lumsden, Bell Telephone Laboratories, said: "A complete study of the American Standard should prove highly beneficial to both the pole producers and the pole-using utilities. It should minimize the misuse of one of our natural resources."

Photographic Apparatus, PH3—
Sponsor: Photographic Standards Board

"It is probable that with the advent of completely automatic exposure control in still cameras, a closer liaison with Subcommittee PH2-11 on Photoelectric Exposure Meters will be necessary for the development of standard methods of testing and defining limits of this new advance in photography," says J. Leslie Quigley, recently elected chairman of Committee PH3. An assistant superintendent at Eastman Kodak Company's Apparatus and Optical Division, Mr Quigley has

been chairman of Subcommittee PH3-1 on Cameras and Related Apparatus for the last three years. He has served as company representative to the American Standards Association since 1955.

A 1938 honors graduate of the University of Pennsylvania, Mr Quigley received the John Edson Sweet Award, top recognition of the University's mechanical engineering department. He has been associated with technical development work at Eastman Kodak Company since 1938. In 1942 he conducted camera instrumentation work for the testing of radar fire control equipment. He later contributed to design and construction of the Eastman 0.1 mil Phototheodolite and the Master Control Unit for fire control testing with Phototheodolites.

J. Leslie Quigley

In 1946 he transferred to the Camera Works engineering department and was assigned to production design of still cameras, and in 1954 was appointed supervising design engineer in charge of still camera developments. Two years later he was given increased responsibility as senior supervising design engineer in charge of still picture products, and has been an assistant superintendent since January 1958. Mr Quigley is a member of the Optical Society of America and the Society of Photographic Scientists and Engineers.

J.A. Van den Broek, Engineering Department, Argus Cameras, Ann Arbor, Michigan, is vice-chairman of PH3. He also is chairman of Subcommittee PH3-1, Cameras and Related Apparatus, and of the task forces which wrote the recently approved American Standard Accessory Shoes for Still Cameras, PH3.30-1958, and also the proposals on exposure time markings for shutters, performance of shutters, and lens aperture markings. He was a member of the American delegation to the meetings of ISO/TC 42 at Harrogate in June, 1958.

J. A. Van den Broek

Mr Van den Broek, a native of the Netherlands, came to the United States in 1934. He has been associated with Argus Cameras in various engineering capacities since 1942. He did design and development work on optical ordnance equipment during and after the war and has been primarily concerned with advance product development for the past six years.

The work of Sectional Committee PH3 is divided among two subcommittees – PH3-1 on Cameras and Related Equipment of which Mr Van den Broek is chairman, and PH3-3 on Optics, Lenses, Projecting and Printing Equipment under the chairmanship of J.D. Hayes of Bausch and Lomb Optical Company.

In 1958 seven standards developed by this committee were approved as American Standard. At the committee's annual meeting in December, eleven more were approved by the sectional committee for submission to the sponsor.

Inch-Millimeter Conversion for Industrial Use—

The Miscellaneous Standards Board of the American Standards Association, during its February meeting, recommended that a special committee be set up to study the practical value of reaffirming the American Standard for inch-millimeter conversion based on the factor of one inch = 25.4 millimeters.

This action was the result of the recent announcement of the standards laboratories of Australia, Canada, New Zealand, South Africa, United Kingdom, and the United States to the effect that as from July 1, 1959, the legal inch to be used in these countries will be standardized to measure exactly 25.4 millimeters (see MAG OF STDS, March, 1959, page 76).

The American Standard Practice for Inch-Millimeter Conversion for Industrial Use, B48.1-1933, based on the conversion factor of 25.4 millimeters = 1 inch, was first approved as an American Standard in 1933. It was reaffirmed in 1947. To assure statistical accuracy in the use of this conversion factor, American Standard Rules for Rounding Off Numerical Values, Z25.1-1940, were developed and approved as American Standard in 1940.

Because of the legalization of the 25.4-millimeter inch, the proposed American Standards Association committee will have to decide whether to let the two standards lapse or whether to recommend their reaffirmation for the convenience of industrial users. Comments from all national groups interested in this matter are invited by the American Standards Association.

The following offers background information on the two standards involved.

B48.1-1933 (R1947), American Standard Practice for Inch-Millimeter Conversion for Industrial Use

In 1932, the American Standards Association was requested to submit to American industry the question whether the inch for industrial use should be standardized to measure exactly 25.4 millimeters rather than 25.400051 millimeters, which was the legal length in the United States. Among the reasons given in support of the proposal were the facts that the ratio of 25.4:1 had already been widely used by industry, and that the use of the American legal factor, which differed again from the British legal factor, was awkward and costly.

The American Standards Association referred the request to a special committee composed of representatives from the following organizations: Society of Automotive Engineers, National Electrical Manufacturers Association, National Bureau of Standards, National Machine Tool Builders' Association, Ford Motor Company, American Society of Mechanical Engineers,

and Gage Manufacturers Association.

The committee prepared a draft standard based on the conversion ratio of 25.4:1 which was submitted to a general conference of more than 50 industrial and technical groups. The conference unanimously recommended the standard for acceptance, and after submittal to additional national groups, and after some minor revision, the standard was approved as American Standard in 1933. It was reaffirmed in 1947.

In addition to specifying the conversion factor of 1 inch = 25.4 millimeters, the standard contains three conversion tables based on this factor–Table 1, Inches to Millimeters; Table 2, Millimeters to Inches, and Table 3, Common Fractions of an Inch to Millimeters.

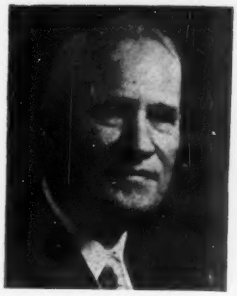
Z25.1-1940 (R1947), American Standard Rules for Rounding Off Numerical Values

The general conference held in 1932 to recommend the estabishment of an American Standard practice for inch-millimeter conversion also resolved that it would be useful to establish an American Standard practice for rounding off numerical values.

The same committee that developed the inch-millimeter conversion factor was charged with this task. In 1938, a draft standard was circulated among professional societies in the fields of mathematics, physics, chemistry, engineering, education, insurance, and statistics for criticism. No objections were registered and only a few suggestions for changes in the draft were made. After minor revisions in the text, the draft was approved as American Standard in 1940.

The main purpose of the standard is to assure a uniform procedure in rounding off decimals while retaining statistical accuracy. The standard provides specific rules for all cases of "rounding up" and "rounding down," and also includes a table for rounding off decimals from one to six places.

Copies of American Standards B48.1-1933 (R1947), 50 cents each, and Z25.1-1940 (R1947), 35 cents each, are available from the American Standards Association, 70 East 45 Street, New York 17, N. Y.



by **Cyril Ainsworth**

DINNSA

(Does Industry Need a National Standards Agency?)

IN CONTINUING the discussion of ASA procedure as embodied in package paragraph 101, we find in the third sentence the first reference to the various methods incorporated in the procedure. The sentence reads:

> "To provide flexibility in meeting the variety of conditions which obtain in standardization work, several alternative methods are provided."

This sentence in no way changes the fundamental consensus principle. The principle is not added to, substracted from, or modified in any way. Being placed between the sentence prescribing the judicial function and the one setting forth the method of test to be applied makes it clear that the several methods provided are designed to enable ASA to exercise its judicial function through the use of the method of test in such a way that due recognition can be given to the variety of conditions which obtain in standardization work.

Over the years many attempts have been made to so write ASA procedure that little room would be provided within which to work to meet the variety of conditions met in standardization work. These have been consistently opposed by those who believe that ASA procedure should be flexible in nature so that the variety of conditions can be met. The consensus principle, the right to representation, equal opportunity in debate, and other fundamentals have always been rigidly adhered to and are inherent in the several methods that are provided.

Primarily, the methods are standards-approving methods. In addition, they advise groups, committees, and conferences of the way their work must be organized and conducted, the conditions they must meet, and the evidence that must be provided if they desire to secure the approval of ASA for the standards they develop. The member-bodies of ASA, in establishing the methods, had no desire whatever to dictate to or control any group, committee, or conference as to how it should conduct its standardization work. It was necessary, however, for the member-bodies to set forth in a formal way the conditions that must be met if the standards resulting from such standardization activity are to be approved as American Standard.

The methods provided by ASA procedure are the sectional committee method, the existing standards method, the general acceptance method, and the proprietary method. Under the first method, a national committee is organized, composed of representatives of groups substantially concerned with the subject of the standard to be developed. The existing standards method was established to provide means whereby any national group may obtain approval as American Standard for any standard it develops under its own machinery. The general acceptance method permits the development of a standard through the medium of a general conference of representatives of groups concerned. The proprietary method is used only for revisions of American Standards and permits a national group to handle such revision work through the use of its own machinery. These methods will be discussed more fully in this column at a later date.